HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association

July, 1923 — *25 Cents*

The mother who loved too well

Can babies be "killed with kindness"?

This very morning, in one of our large cities, there is a mother frantic with grief over the loss of her three-year-old baby. She would give anything to feel once more the touch of those tiny hands, to fold the fairy figure to her breast, to perform the thousand little acts of kindness that only a mother's love can conceive. To her the light of the world has departed.

She does not know it, but SHE KILLED HER BABY!

It was an only child. She wanted it to have every happiness. In her mistaken zeal she left no spoken or implied wish ungratified. Without regard for the consequences, she indulged the child's every whim, picturing her own remorse and self accused cruelty if the baby should be denied.

She disregarded diet, sleeping hours, discipline. As the baby became fretful and subject to minor ailments, the mother increased her devotions and misdirected love. Eventually the little constitution was weakened to the point where a dread disease found foothold and almost over night snuffed out the life that was the mother's chief interest.

An extreme case perhaps, but the same thing in lesser degree is going on everywhere. Medical aid was called in, but too late to overcome the tremendous odds. Many serious ills can be entirely prevented by the proper precautionary measure.

To be safely on the side of health, to be sure that every organ is performing its function properly, consult your doctor at stated intervals. See him whether or not you feel badly. He is not expecting or hoping to find trouble any more than you, but if any irregularity *should* exist, he can prescribe the right treatment at the time when it is easiest to conquer the ill.

Professionally and individually, the doctor's whole aim is to prolong and save human life. What better way is there than to prevent disease from obtaining a foothold in your body?

Remember it is easier to keep well than it is to get well once you are sick. Extend the life span for your whole family by having each member examined by your doctor at regular intervals.

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Jenner inoculating his son Edward, at the age of eighteen months, November, 1789.

(From The History of Inoculation and Vaccination. Courtesy of Burroughs Wellcome and Company.)

Smallpox Before and After Edward Jenner

VICTOR C. VAUGHAN

SMALLPOX, so far as definite records available show, existed in India several centuries before the beginning of the Christian era. From India this disease passed into China, and from thence slowly but gradually spread through southwestern Asia, reaching Arabia and Egypt about the time of the birth of Mohammed, 572 A. D. It accompanied the Arabs in their western conquests through the sixth and seventh centuries, and it prevailed at the time of the sacking of Alexandria by the Arabs in 640 A. D. The disease is quite accurately described by Ahrun, an Egyptian by birth and a Christian priest, who lived in Alexandria in the seventh century. A more complete treatise on this disease was written by an Arabian physician, Rhazes, about 920 A. D.; this work, originally written in Syriac, was translated into Greek and subsequently into Latin.

In order to realize the nature of the scourge from which people have been delivered by vaccination for smallpox, one must go back to the records of the days before any protection had been devised. As late as the seventeenth century, in London, during certain periods, few persons were not pockmarked, many horribly so. The disease disfigured and blinded thousands, and was the cause of one tenth of all deaths. A German proverb ran, "From love and smallpox but few remain free." In countries in which vaccination is now generally practiced, few persons, indeed, few physicians, ever see a severe case or realize what an epidemic of smallpox can do.

Smallpox, we must assume from the lack of mention in the writings of Hippocrates, Galen, and others, was unknown in Greece and Italy at the time of the height of their civilizations. The first work on smallpox in England is to be found in the writings of John of Gadesden, whose book was printed some time between 1305 and 1314 A. D. This work contains a chapter on measles and smallpox. At that time England was thinly settled, the total population probably numbering not more than a million; certainly it did not amount to twice that number. With the exception of London, there was probably not a city in England with a population of more than five thousand. As the density of population in England increased, smallpox became more prevalent, and the same was true of all western Europe. The mortality bills for London were first published in 1627. During the remainder of that century and during the first of the following century smallpox accounted for about 10 per cent. of all deaths in London. We have no information as to the number sick with this disease. Only the deaths were reported. The death of Queen Mary in 1694 from smallpox caused the historian Macaulay, more than a century later, to write the following graphic description of this disease and its ravages:

> That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague had been far more rapid; but the plague had visited our shores only once or twice within reach of memory; and smallpox was always present, filling the churchyards with graves, tormenting with constant fears all whom it had not yet stricken, leaving on those whose life it had spared, the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, making the eyes and cheeks of the betrothed maiden objects of horror to the lover.

The same historian tells us that in the early part of the eighteenth century it was unusual to meet on the streets of London one whose face was not scarred by smallpox. The first account we have concerning smallpox in this country is when it broke out in Boston in April, 1721. It was brought on a ship from the Barbados. The population of Boston at that time was 10,565. Within a few months 5,989 persons were attacked. There was a severe epidemic in Charleston, South Carolina, in 1738, the disease being imported by a slave ship. During the eighteenth century smallpox took heavy toll from the greater part of the civilized world. In proportion to the increasing population there was but little decrease in its ravages in London from the beginning to the end of the century. Certain years showed definite epidemic movements, but no one was able to figure out any definite periodicity. With improved and more rapid transportation, smallpox became established during this century in almost every part of the world.

Inoculation Smallpox

Indian medical books written in the third century B. C. give directions for the production of this disease by inoculation. Smallpox was so universal and so few escaped it that the oriental with his well known belief in the fates quite wisely decided that if he must have the disease, he would choose his own time for having it. It became the custom

therefore to take a tiny bit of matter from a pustule on one suffering from the disease naturally and insert it under the skin of, that is, inoculate, others in health. Since the disease was thus induced, it took a milder course, was accompanied by fewer pustules, and the fatality was much less than when acquired in the natural way. The reasons for this modification of the disease when induced by inoculation are perfectly plain. The patient submitted to inoculation only when he was in health. After inoculation he took care of himself, and since matter was selected only from persons who had mild attacks, the disease proceeded with less virulence. According

Lady Mary Wortley Montagu. In 1717, Lady Mary, the wife of the British Ambassador at Constantinople, had her son inoculated with smallpox; he was the first British subject to undergo the operation.

(From The History of Inoculation and Vaccination. Courtesy of Burroughs Wellcome and Company.)

to Indian medical books, inoculation was performed by Brahman priests, and special prayers which they incanted during the operation are given. Inoculation for smallpox followed the progress of the disease into China and through Arabia.

The first information coming to England cencerning the practice of inoculation for smallpox was in the form of a letter from a Greek physician who practiced in Constantinople. This letter was published in the Philosophical Transactions of the Royal Society early in 1714. A year later, a Scotch physician, Kennedy by name, witnessed inoculation for smallpox while he was traveling through Greece, Turkey, and Persia. On his return home he wrote a monograph on the subject. It seems that inoculation was introduced into Constantinople in 1701, and was practiced by Greeks. In 1717, Lady Mary Wortley Montagu, wife of the British Ambassador at Constantinople, investigated the claims made for inoculation and had her five-year old son inoculated by a Greek woman under the supervision of Dr. Maitland, physician to the British embassy. Upon her return to England, Lady Mary joined with Kennedy and others in advising inoculation. The king, George I, was induced to remit the capital sentence of six felons on condition that they submit to inoculation. These convicts, three men and three women, were inoculated August 9, 1721, with matter taken from a pustule on a patient suffering with natural smallpox. Later, six charity children were submitted to the same operation and, since all went well in these cases, the Princess of Wales had her six children inoculated.

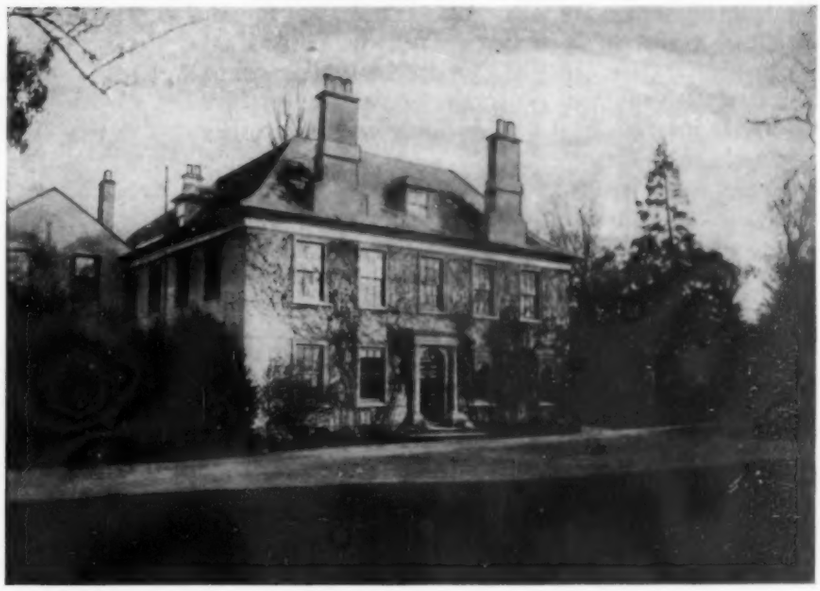
Inoculation for smallpox became popular in England for a time. There were certain drawbacks, however, to this procedure. While inoculation was followed by a milder form of the disease and was good for the person inoculated, the disease thus acquired was contagious, and those acquiring it by contagion developed it in an aggravated and often fatal form. Consequently, inoculation lost its popularity for a time. It was revived in 1738 by the experience of Mowbray and Kirkpatrick, physicians in Charleston, South Carolina, at the time of the outbreak in that city. These physicians found that it was not necessary to take the matter for inoculation from a person who had natural smallpox, but that it could be taken from the arm of a person who had been inoculated, and that it could be transferred from arm to arm quite indefinitely. As a result of this observation inoculation was again widely practiced in England and was continued even after Jenner's discovery of vaccination until it was prohibited by Parliament in 1840.

Inoculation smallpox as practiced in England and America during the eighteenth century involved elaborate surgical procedures, was costly, and was limited largely to the children of the well-to-do; some weeks were usually given to preparing the child for this operation and a similar period of care followed the procedure. Sometimes the attendants of the child during these weeks became infected in the natural way and developed the unmodified disease with all its dangers.

Jenner's Discovery

It will be understood from what has been said that inoculation for smallpox was widely practiced in England and in this country dur-

ing the latter half of the eighteenth century. At that time, there lived in the village of Berkeley in Gloucestershire an observant and wide-awake doctor, Edward Jenner. As was the custom with doctors, he had occasion to inoculate numerous persons for smallpox. Fortunately, Gloucestershire was a dairy country and there appeared from time to time among the cows a disease marked by the appearance of pustules on the teats, and known as cowpox. Often milkers with abrasions, however slight, who milked cows with these pustules on their udders became infected and developed pustules on their fingers and hands. Among others, those who had had cowpox, as this disease was called, went to the doctors for inoculation for smallpox. It became quite generally known among the doctors practicing inoculation that persons who had had cowpox did not develop smallpox following inoculation. Jenner was not the first to make this observation, but he was the first to investigate scientifically the relation between these diseases. May 14, 1796, he took some matter from a cowpox sore on the hand of a dairy-maid and used it to inoculate James Phipps, a healthy boy about eight years of age. This treatment was followed by a single pustule which rapidly formed a scab and dried up, leaving only a scar. Six weeks later, Jenner inoculated this boy with smallpox; the inoculation was without effect. During the next five years more than five thousand persons were first inoculated with cowpox and subsequently with smallpox, and in no instance did the second inoculation have any effect. In the whole history of scientific experimentation there has never been an investigation so widely tested with human beings rather than animals.



Chantry cottage, Jenner's home in Berkeley.

(From The History of Inoculation and Vaccination. Courtesy of Burroughs Wellcome and Company.)

Vaccination, although bitterly opposed by many, won on its own merit and soon it was widely practiced over all the civilized world. In 1805, Napoleon ordered that all of his soldiers who had not had smallpox should be vaccinated. As early as 1800 Dr. Waterhouse of Cambridge, Massachusetts, vaccinated his own children and subsequently inoculated them with smallpox. Thomas Jefferson had members of his family vaccinated and supplied others with vaccine matter with the recommendation that they use it. France soon offered free vaccine to all who were not able to pay for it. The Empress of Russia ordered that the first child submitted to the operation should receive the name of Vaccinof and should be educated at public expense. Spain sent ships carrying doctors and vaccine matter to its wide domains in the western hemisphere. Jenner sent vaccine to a tribe of American Indians suffering from smallpox, and after proving its value the Indians returned the following message:

The old vicarage, Berkeley, where Jenner was born.

(From The History of Inoculation and Vaccination. Courtesy of Burroughs Wellcome and Company.)

> We send a belt and string of wampum in token of our acceptance of your precious gift, and we beseech the Great Spirit to take care of you in this world and in the Land of Spirits.

In 1802, Parliament voted Jenner, who had carried on all his work

without recompense, an honorarium of ten thousand pounds. This was followed in 1806 by another expression of gratitude in the form of twenty thousand pounds. It must not be assumed, however, that Jenner's life after his discovery was altogether free from vexations. He was constantly attacked; wild statements were made concerning the harm that might come from vaccination; every ill that befell a vaccinated person was attributed to vaccination. Not contented with this, many persons went further and evolved from their own imagination diseases and abnormalities which have never existed. It was claimed that women who had been vaccinated bore children who looked like calves and others who developed bovine peculiarities of behavior.

Jenner was induced by his friends to remove to London to try his hand as a practitioner, but he soon tired of city life and returned to his village home.

Matter for Vaccine

In the early years of vaccination, physicians were compelled to depend upon outbreaks of cowpox in order to obtain material to use in vaccination. Cowpox, however, appeared and disappeared and could not be relied on for a constant supply of vaccine. This has been remedied by the establishment of farms, the purpose of which is to perpetuate the virus and supply at any time all that is needed. Before development of these farms vaccination from arm to arm was common, but this practice gave rise to a criticism which was not altogether without merit. So long as arm to arm vaccination was practiced, there was the possibility that diseases might be transmitted with the transfer of matter. At present in all countries the preparation of matter for vaccine is under legal control. No one can prepare such material except under government supervision. Female calves of from two to four months are tested with tuberculin in order to make certain that they are not tuberculous, and are kept under constant observation for the detection of any other disease. The abdomen is closely shaved and the vaccine material introduced under strict asepsis through small scarifications. The area of skin is kept dressed with sterile gauze and cared for with all the precautions that accompany an abdominal operation on a human being. When the pustules are ripe the area is cleaned and the serum which exudes is worked up with a mixture containing 50 per cent. of glycerine, 49 per cent. water, and 1 per cent. carbolic acid. Freshly prepared vaccine always contains bacteria; therefore it is not used for three or four weeks, by which time the glycerine has usually killed all the bacteria. In order to be sure about it, however, the vaccine is not put up until it has been tested bacteriologically and found to be sterile. It is also

The statue erected to Jenner in Hyde Park, London.

The house at 14 Hertford Street, London, which Jenner occupied during his short stay in the city. The plaque between the windows, placed there by the London County Council, tells of the historical significance of the building. It is now occupied by two physicians.

tested for tetanus, and its potency is determined by animal experimentation. In this country the United States Public Health Service through the agency of the Hygienic Laboratory at Washington looks after all vaccines. No one can make vaccine unless licensed to do so by this service, and the director of the laboratory frequently goes into the open market, buys samples of all vaccines made, and tests them. With the precautions now employed there is no danger of the transference of any disease in vaccination against smallpox.

Degree of Protection Secured Through Vaccination

It must not be assumed that vaccination against smallpox gives 100 per cent. protection throughout life. Even natural smallpox gives no such protection. Jenner himself collected from the literature about a thousand cases of persons who had had smallpox twice. Inoculation as formerly practiced did not give life-long protection in all cases. Even vaccination and revaccination do not absolutely and indefinitely protect against infection with smallpox. Smallpox infection after one attack or after proper vaccination is not a true smallpox, however, but is a modified and much less severe disease, known as varioloid. In varioloid the disease is relatively mild, there are few pustules, and death seldom results. It should never be forgotten, however, that varioloid is contagious and persons acquiring the disease from a case of varioloid have natural smallpox, which possibly may be accompanied by pristine malignancy.

Frequency of Vaccination

Experience has shown that in order to eradicate smallpox from a community, city, or village, every child should be vaccinated before it reaches six months of age. Vaccination should be repeated every six years, and at any other time when the disease is present in the community. After the Franco-Prussian war, during which time the German army suffered severe losses from this disease, this rule was put into effect and for many years there was practically no smallpox in the whole of Germany.

Vaccination a Surgical Procedure

Some persons have an idea that vaccination is so simple a procedure that any one may do it. This is a mistake and is accountable for some of the bad infections that result. Vaccination should be performed only by one who has training and experience, and who knows how to protect the person from undesirable infection. Moreover, the vaccination should be inspected by the physician on the first, second, fifth, and seventh days after vaccination. If the crust, pustule, breaks at any other time the vaccinator should be consulted, possibly for preventive treatment. Most of the bad arms come from infection when the pustule breaks, and this may occur as long as the wound remains unhealed. It seems unnecessary to say that dirty fingers and soiled clothing may carry dangerous bacteria into any open sore.

The Virus of Smallpox

The causative agent of smallpox has not been positively identified. The weight of evidence is that it is due to a microscopic animal organism belonging to the protozoa. As early as 1892 an Italian physician inoculated the cornea of rabbits with the virus of smallpox and cowpox and observed changes which followed, the same in the two instances. He chose

Mother and daughter. The daughter had been vaccinated; she did not contract smallpox, although she was exposed to it.

the cornea because it would give him opportunity to study the life history of the parasite, should he find one. He did find minute bodies which were frequently changing in position and shape, but seemed to be devoid of structure. In honor of the man who reported these findings, these organisms are known as the Guarnieri bodies. These observations have been confirmed by American and other scientists, but until we are able to isolate the organism and study its effects on animals we cannot be sure that it is the cause of smallpox.

Period of Incubation

The period of incubation in smallpox, that is, the time between infection and manifestation of the disease, runs from twelve to fourteen days. The disease is ushered in by a

chill, often accompanied by severe pain and nausea and vomiting. The eruptions which characterize smallpox are first hard and red; later they are filled with serum, and then with pus. These pustules may be separate, discrete, or run together, confluent. The latter type marks the more virulent forms of this disease, and is followed by a greater mortality and leaves more serious disfiguration among those who recover. Following inoculation with smallpox the period of incubation is about eight days. In vaccinia, the effect of vaccination, the incubation period is about five days. The period of fever lasts from three to four days, and the number of pustules is limited, provided the operation has been properly done.

Children of one family who were brought to the Municipal Hospital of Philadelphia with the mother and father, who had smallpox. The child in the center had been considered too young to be vaccinated. The other children had been vaccinated a year before; they remained free from the disease, although for several weeks they lived in the wards of patients with smallpox. *(Courtesy of Lea and Febiger.)*

Types of Smallpox

It is generally agreed among experts that there are two types of smallpox, one known as Asiatic and the other as African. The latter is the milder and is generally designated as "Kafir milkpox," also "alastrim." For public health reasons there is no need of recognizing the distinction between the two forms. Vaccination protects in practically the same degree against both.

Laws Regarding Vaccination

There are three methods by which vaccination against smallpox has been dealt with legally. In some countries vaccination and revaccination at stated times and under certain conditions are compulsory. I have already referred to the reduction of this disease in Germany by this method. In all armies vaccination against smallpox is now compulsory, and as a result this disease has become a negligible factor in military organizations. The second method is leaving the matter of compulsory vaccination to the community. This has been generally followed in England, and is responsible for many severe local outbreaks in that country. In 1896, the one hundredth anniversary of the discovery of vaccination, there was a deadly epidemic of smallpox in Gloucestershire, the locality in which Jenner lived and where he did his work. Had compulsory vaccination been in effect this would not have occurred and many lives would have been saved, but unfortunately man needs a forceful reminder now and then of his failure to use his intellect. In this country the third method is followed; compulsory vaccination is not in effect except in the presence of an epidemic or

at other times in a roundabout way. In most of our states, if not in all, there is a law compelling all children between certain ages to attend school and authorizing the school authorities to exclude from the schools those who have not been vaccinated. Whether this holds good at all times or only in the time of epidemics has been definitely decided by the supreme courts of the individual states. In certain states the supreme court has decided that school authorities do not have the right to require vaccination against smallpox for admission to schools except in the presence of an epidemic. Where this decision holds, large numbers of persons unprotected by vaccination have grown into adult life and supply an abundance of susceptible material to which are due the destructive epidemics that occur from time to time. Recently (1922) the supreme court of the United States has decided on a case coming to it from San Antonio, Texas, that the school authorities have the right to require vaccination for admission to schools at all times.

Within recent years the epidemics of smallpox in this country have been largely due to importation from Mexico or to the migration of the unvaccinated negro from the southern to the northern states. An epidemic in Detroit in 1920 was due to negroes. From April 1 to June 30 in that year four hundred and eighty-two cases of smallpox were reported in Detroit. Three hundred and eighty-two of the patients, 79 per cent., had never been vaccinated; twenty-one, 4.4 per cent., had been vaccinated successfully more than eight years previously; twenty-three, 4.8 per cent., had been vaccinated, but never successfully, more than eight years previously; twenty-five, 5.2 per cent., had been vaccinated but not successfully within eight years; eight, 1.7 per cent., had been vaccinated successfully after exposure to the disease; and twenty-three, 4.8 per cent., had been vaccinated unsuccessfully after exposure to the disease. The rate to the hundred thousand was nearly ten times as great among the negroes as among the whites.

During the year 1917 there were 110,073 persons on the Texas border vaccinated against smallpox, but even this precaution did not prevent the entrance of the disease into this country, as is shown by the fact that the same year the death rate from smallpox at El Paso was 5.8 for each hundred thousand. The smallpox brought into this country from Mexico has been an especially virulent type. That vaccination and revaccination properly performed may reduce the mortality from this disease to the zero point is shown, as we have already stated, by the fact that during the World War in no army was this disease anything more than a negligible factor in the mortality loss.

It is impossible to say what percentage of our present population is unprotected by vaccination. In some localities it is large, and so long as this continues there will be epidemic outbreaks. Most immigrants from Europe are vaccinated and contribute but little to the danger from this disease. The unvaccinated are made up principally of native-born whites and negroes, who through ignorance or indifference neglect to safeguard themselves. If they think at all—and most of them do not—they know that if they acquire smallpox the public will care for them.

Honors still come to Jenner. A small fishing town on the west coast of Japan, recently ravaged by smallpox which was finally controlled by vaccination, has erected a monument to him. If all American cities with similar experiences should follow this example, our country would be dotted with evidences of man's continuing gratitude to this great benefactor.

WOULD YOU BELIEVE IT?

The first bathtub in the United States was built in Cincinnati and installed in a home in that city in 1842—just eighty-one years ago. The bathtub was made of mahogany, lined with sheet lead, and its far-seeing owner proudly exhibited it at a Christmas party.

The next day the newspapers of Cincinnati denounced it in no uncertain terms as a luxurious and undemocratic vanity.

Then along came the medical men and solemnly pronounced it a menace to health.

Boston, in 1845, made bathing unlawful, except when prescribed by a physician, and Virginia was so wrought up that she taxed bathtubs $30.00 a year.

—The Northwestern Health Journal.

Physical and Psychologic Examinations of Young People

SANGER BROWN 2D

THAT expression of wisdom, long attributed to the Chinese, that one should visit the doctor while well rather than wait for illness, is heartily endorsed by physicians interested in preventive medicine. To the credit of modern public schools, it must be said that physical examinations are rapidly becoming the rule. But is there any school in which the examination is complete, that is, does it include a psychologic as well as a physical survey? It is quite natural, perhaps, that nothing of this sort is included as yet in any school system. That would be almost too near the ideal. The physical examination can be carried out quite readily; but is a mental and psychologic survey possible? Can mental characteristics, capabilities, handicaps, or aptitudes be determined by methods which are now known to us?

The aim of many educators of today is not to give all children the same schooling, but to give each child training for the life work for which it seems naturally fitted. This means discovering, as far as possible, each child's natural gifts. At the Classification Clinic in New York, where Dr. Brown is assistant director, the staff is giving children psychologic examinations in the hope that every child may thus learn early what work it probably can do best.

We are fast approaching the time when this question can be answered in the affirmative. As a result of mental hygiene surveys of public schools, and of psychologic tests of groups and individuals, far reaching conclusions have been drawn regarding the mental characteristics of the children examined. Unusual and exceptional traits stand out more prominently than the usual. Certain unusual mental and nervous traits found in children mean that they require special training.

Psychoneuroses

Many children who are considered problems by their teachers, are in reality suffering from psychoneurotic symptoms. These, in ordinary language, are nervous symptoms. They find expression in overactivity, mental instability accompanied by disturbances of sleep, undue mental and physical fatigue of neurasthenic origin, spasms, tics, tremors, various kinds of fears, compulsions, and a host of other kindred symptoms. The causes of these conditions are legion. They may be physical, mental, environmental, social, or any combination of these. Often the cause is deficiency in diet, some variety of malnutrition.

Personality Disorders

Certain unusual temperamental traits common in childhood are expressed by sensitiveness, shyness, seclusiveness, and solitary tendencies, or by the reverse of these, such as undue aggressiveness, boisterousness. All of these character traits are often found to be directly attributable to environment, social factors, or physical defects. They are not exclusively constitutional or inherent, as has been maintained by many students of heredity. In other words, these particular character traits are not infallible indications of mental eccentricity or peculiarity in later life, at least not so far as anyone can determine. Military schooling has been suggested for these children, but a military school often accentuates these traits. Such children require a thorough physical and psychologic study, and as a result of these examinations the kind of training and education which is required is generally evident.

Variations in Intelligence

We have always known that some children are slower than others with their lessons. By psychologic tests, however, it is possible to measure the ability to learn with a great degree of accuracy. These psychologic tests should be interpreted, of course, in conjunction with other mental factors.

Is it humiliating to learn that your child cannot progress in school as quickly as Johnny across the street? You may as well be philosophic about it. Your child may make the more successful man. Johnny may be brilliant, but brilliancy is not all there is in this life. However, one thing is clear. Your child, who learns slowly from books, and Johnny, who learns quickly from books, should not be kept in the same classes from the age of five to fifteen. If psychologic tests teach anything, it

is that variations in grading should be made. Well informed teachers appreciate this fact.

Many other mental characteristics may be mentioned, delinquency, for example. Children misbehave because they are nervous, because they fail in school, because they are unhealthy.

The Classification Clinic

An organization consisting of physicians, psychologists, and educators has been established in New York City for the purpose of making physical and psychologic examinations of young people. This organization is a part of the Neurological Institute of New York, the first hospital of its kind in this country to be devoted solely to care and treatment of persons with nervous diseases. The founders of this organization, known as the Classification Clinic, believe that while they may not always be able to advise parents what is best for their children to do, or to attempt in life, they may, at least, as a result of their complete examinations, definitely state what certain children should not attempt to do.

How many men are wasted in scientific professions who should be in business? How many men are failing in business enterprises who would succeed in scientific pursuits?

The organizers of the Classification Clinic hope that the principles for which the Clinic stands may be introduced into colleges, high schools, preparatory schools, and, in fact, into all institutions which have the responsibility of the education of young people. Physical examinations are already making headway in our schools. How soon will psychologic examinations be considered equally important?

Helping the Doctor

JESSE R. GERSTLEY

THE spirit of the doctor on entering a home is far different from that of most tradespeople, and is in a way more like that of the priest or clergyman. Of course, no two doctors are alike. One takes up a specialty such as children's diseases because he loves children and wishes to help them. Another does so by chance. One finds it very easy to make friends with his little patients. Another finds it more difficult. But all children's doctors have one point in common. Every one wants the child to get well. The hope and purpose of the doctor is entirely that of the parents, and if the mother is wise and recognizes their common interest, she will do her utmost to help. Surprising as it may seem, only a few mothers appreciate this fact. Though they wish to be of assistance, often in every possible way they make the doctor's work more difficult. Particularly is this true when the doctor wants to learn all he can about the baby and examine it.

Do you have a little howler in your home when the doctor comes? If you do, nine chances out of ten the child's behavior is your fault. When it was peevish and fretful, you became so too, and threatened to send for the doctor—and the doctor might scold and hurt—if it did not behave. You would all have been much happier if you had explained to the child that the doctor was coming to help drive away the aches and pains.

Children Vary with Race and Environment

Every one knows that many influences make children different. One does not need to be a doctor to know the effect of race. A Chinese baby or a negro baby is different from a white baby. Geography, too, plays a contributing part. An overdressed little French child promenading with a nurse and poodle dog in a fashionable French park is quite different from a barefoot, ragged little fellow climbing the mountains of North Carolina. But children's doctors find a great deal of difference in children of the same city, of the same neighborhood, and even of the same family. They find differences because of characteristics inherited from parents and grandparents. They find differences due to methods of feeding. They find differences due to social conditions. The child born when the parents are poor is quite different from the child born after these parents have become rich. The child in constant association with an intelligent nursemaid is more advanced than the child associated with one of mediocre mentality. Another important factor is the number of children. An only child is very different from one who has six brothers and sisters. The parents love it too much, and it becomes spoiled and wilful. The number of older persons around the child has its effect; a baby left quietly to itself all day is very different from the baby surrounded by a number

of admiring relatives who solicitously make it nervous, irritable, and peevish by treating it like a pet dog or a plaything. All these things must be considered by the children's doctor before he examines his little patient.

What the Doctor Must Know

When a baby is sick the modern doctor must discover not only the nature of the trouble,

This is the correct way in which to hold a young baby whose throat is to be examined.

but also the nature of the baby. The two methods at his disposal are taking the history of the case by asking many questions, and making a physical examination. At times a careful history may be of even greater importance than the examination itself. Answers to questions may influence the entire treatment. Is the baby nervous because of nervous disease in the family, because of too many grown persons about, or because of improper feeding? Did the disease start suddenly or gradually? Has the baby been gaining in weight? How often has it vomited; how many bowel movements since the symptoms began; is it in pain? Nothing is more exasperating than to ask vitally important questions while the mother, apparently totally uninterested in everything the doctor wishes to know, walks up and down with her crying infant, tosses it in her arms, pokes rubber nipples into its mouth, and talks baby talk. The baby's life may depend on her answers.

What the Doctor Must See

It should be almost unnecessary to say anything about the importance of physical examination. Many severe diseases, such as scarlet fever, evidence themselves first in the throat. The rash of measles is preceded by little spots on the inside of the cheeks. In prolonged fevers, tonsils, adenoids, ears, and chronic sore throat should be considered. Incredible as it may seem, many mothers unknowingly do all in their power to make the examination difficult. This is true particularly if the baby is an only child, or is many years younger than the next in the family. The mother is so afraid that her little one will be frightened or cry that she makes it impossible for the doctor to do more than guess at the cause of the trouble. The other day a mother called a doctor because her only child, a little girl, had a slight fever. Everything went well until the doctor wanted to examine the child's throat; the child, like most children, started to cry. The

If the mother holds the baby's hands in this position, the doctor can steady its head with his left hand while he holds its mouth open with a spoon or tongue depressor in his right hand.

mother then asked the doctor not to bother her little girl since unquestionably her throat was all right. The doctor was inexperienced and agreed. A few days later the child was much worse, and another doctor was called. He had the same difficulty. First he tried to persuade the mother to hold the child's head and hands so that he could use a flash light in his

left hand and a spoon in his right, but she persistently let the head loose at the wrong moment. Then he took her to a window and told her simply to hold the child's hands so that he could steady her head with his left hand. Then the mother let the hands loose at the important moment. At last after a bitter fight with the child and many tears of sympathy from the mother, he was able to see the grayish-white, spreading membrane of a severe case of diphtheria. If the child had died, the blame would have been not the doctor's, but the mother's. This is just one of many instances in which a mother's love for her child is of such a nature that rather than submit to the pain of hearing it cry she may risk its life.

What careful doctor would expect to make a diagnosis of measles or chicken pox or scarlet fever without examining the skin of the entire body? Yet many mothers expect that with superhuman powers the doctor's eyes can penetrate three layers of clothing. What careful doctor would diagnose pleurisy or pneumonia without a thorough examination of the entire chest? Yet many mothers seem to think that with mysterious power he can hear through a half inch of cold wet compresses; or that by putting his stethoscope on a tiny spot of bare skin he can form an opinion of the condition in the whole chest. It is remarkable how many mothers pretend to help the doctor, but by their very weakness encourage the baby's resistance. This type of mother always has an excuse for not undressing the baby. She holds it, not to aid the physician, but to demonstrate her intense love. She presses the baby to her bosom in such a manner that to examine its chest the doctor must listen through the mother's hand. She has forgotten her real duty to her sick child.

Telling the Child About the Doctor

It must be apparent how vital may be the part of the mother in cooperating with the doctor. Long before his visit much can be done to put the child in a proper frame of mind. The doctor should be referred to not as an unpleasant person, but as the child's best friend, who is coming to help make it well. Often the difficulty lies with the nurse. A nurse who tells bogy-man stories about the medical man should not be tolerated. Above all, the child should be taught that it cannot always have its own way. Many a youngster who yells at the approach of the doctor does so not from fear, not from pain, but because it does not want to be bothered. If it yells loud enough it can always have its own way. When the doctor appears, all attention should be paid to the questions. If the baby cries too loud it should be taken into another room. The accuracy of the answers may determine the entire treatment.

How the Mother Can Help

During the examination everything depends on the firmness of the mother. If she feels herself too weak to be of real assistance, she must let some one else hold the baby. Better than this, if she is not in sympathy with the doctor's careful physical examination she should leave the room. The doctor certainly will not hurt the child. Many a baby who works itself into a frenzy while getting its mother's sympathy will become docile as a lamb when she is apparently out of hearing. It knows that as long as its mother is within

A baby held in this manner cannot interrupt an examination of the ear by waving its hands or wiggling its head.

hearing it has her moral support, but with her out of the way its efforts are in vain. If the mother turns her struggling child over to another person and leaves the room, under no circumstances should she return until the examination is completed, for her return suggests to the child a lack of confidence in the doctor, and makes the examination all the more difficult. Of course, conditions vary with every case. The mother must use her judgment and intelligence. But the baby's welfare depends largely on the results of the history and physical examination. If the mother is wise she will by her own firm attitude do all in her power to educate her child to let the doctor try to help.

Hope for the Handicapped

NATHANIEL ALLISON

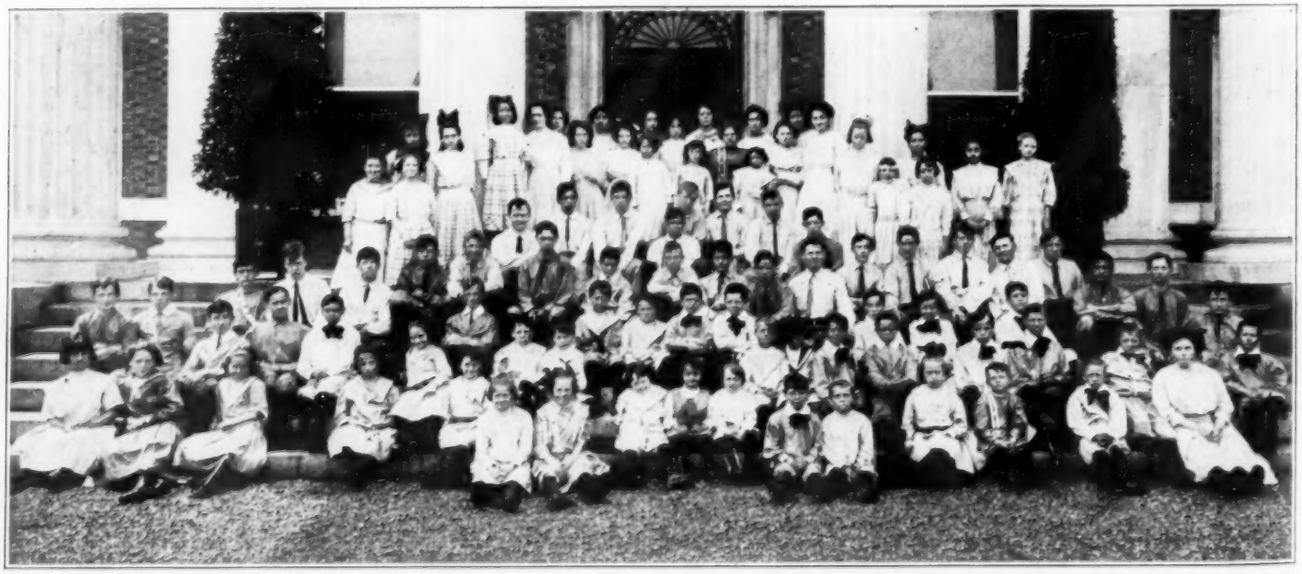
THE word cripple is here applied to the group of persons who are for one reason or another sufficiently handicapped by a physical defect or deformity to merit special consideration at the hands of the rest of society. The word has had much to do with our making a definite social division; it may be said to separate the fit from the unfit. Originally it meant "to creep." It has gained a much more inclusive meaning, however; it now describes the person deprived of limb, strength, activity, or capability of service or use. One's resources may be crippled, one's mental processes may be crippled; in fact, the person who for any reason, material, physical, or mental, falls into the class of the unfit is said to be a cripple.

In this discussion we are concerned especially with the group of persons who are separated from the community by reason of physical unfitness, those who can take little part in normal human activities because of physical handicaps.

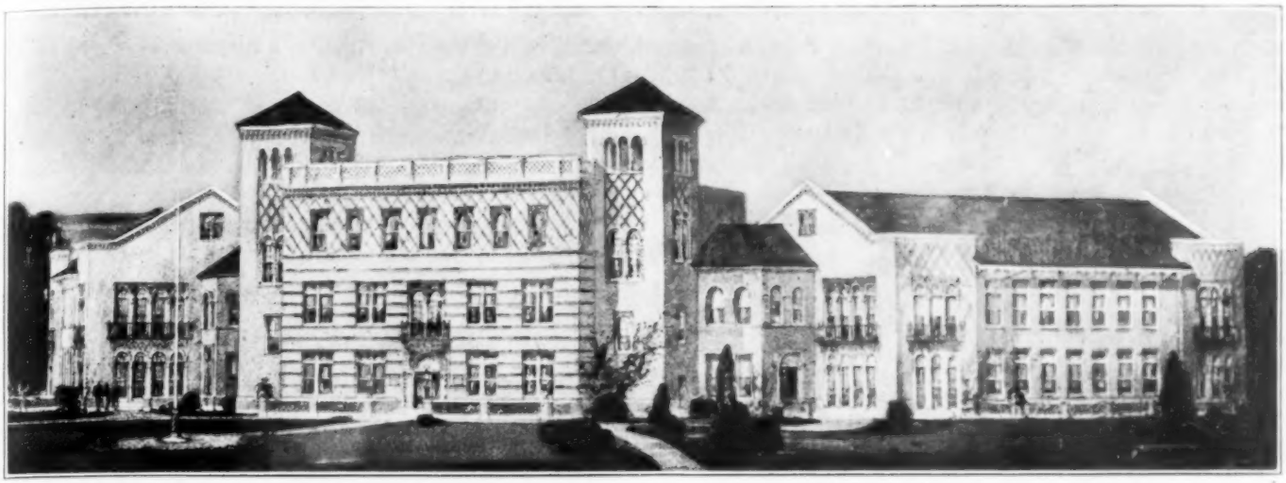
The conception of society as responsible for its members is gradually being accepted. The crippled person's deformity must be corrected, when possible, and his natural abilities developed all the more fully because of his handicap. This paper, originally a public lecture, gives some idea of the task for each community in making of its crippled children self-supporting and contented citizens. Dr. Allison is surgeon to the new Shriners Hospital for Children and professor in the Washington University School of Medicine, in St. Louis.

Old Attitude Toward the Physically Unfortunate

In the dim past of the human race our ancestors had no place in their society for the physically unfit, and for ages the handicapped were left to die or were actually put to death. Only the physically fit could keep the stride of the tribe or clan. Our heritage from this is a deep-seated consciousness of the dividing line between those who are normal and strong and those who are physically deficient, a consciousness that amounts to an instinct. With the dawn of civilization an improvement in this attitude began to appear. Skeletons of prehistoric civilizations which have been discovered show that cripples were suffered to reach adult life, and the higher the reach of the culture the more evidence there is that humanity was throwing off its instinctive dread of the disabled and unfit and was at least allowing these unfortunates a place in the scheme of living. But the quality of pity was a small thing in the minds of men



The Widener Memorial Industrial School for Crippled Children in Philadelphia admits only children of good mentality between four and ten years. This provision is made so that the children may have the benefit of early medical care, may be trained readily into habits of orderly conduct, and may have the time to receive the complete industrial education before their discharge. Outdoor play and indoor amusement and activities make the life of these children as near as possible that of the normal child.



The Shriners are erecting this beautiful hospital in St. Louis for the care of crippled children.

even after many centuries of so-called civilization. There are many records from the middle ages to show that the cripple was driven out to become a beggar on the roadside or a criminal. It was the worst of luck to meet him, and for him there was no salvation. He often was used as a court fool to excite laughter and merry jest by his deformity. Francis II had a woman burned to death in Avignon who had given birth to a deformed child. Even so great a Christian as Martin Luther believed in the doctrine of changelings and that cripples at birth were changelings who should be left to die.

Simple Justice for the Handicapped

Not until recently, as time is measured, has the hard uphill fight of the cripple for his rightful place been in any way lessened or made easier for him. And now it is not in any way as easy as it should be. The feeling, the instinct, call it what you will, of the fit against the unfit, the handicapped, is the great barrier which must be overcome before a plan of simple justice will be established in the relationship of the community to the cripple. And it is simple justice that should be given the cripple—neither charity nor pity. The community owes him only justice. In return he owes the community the bravest and most independent of attitudes. The community has from an inherited instinct set him aside. He must take his place as an independent member of society with his handicap recognized and overcome as far as possible. What he is able to do, he must do even better than the average person can, because of the feeling against him.

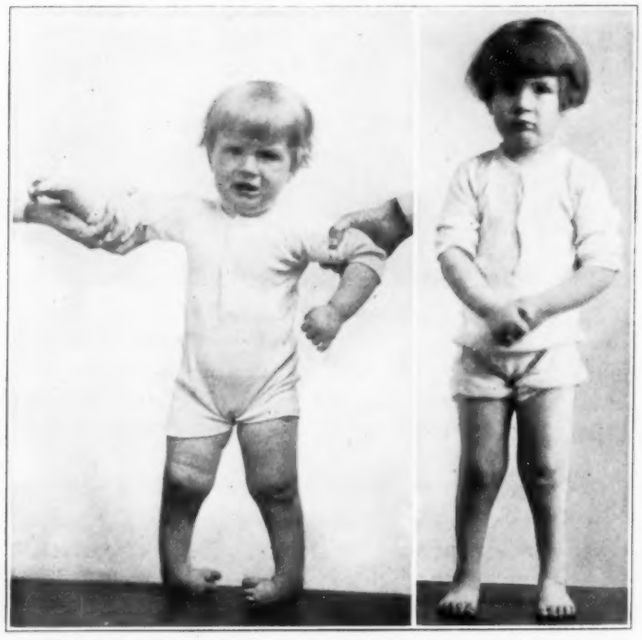
The Need of Informed Understanding

In justice is included an attitude of sympathetic and informed understanding. Sympathy alone, as a rule, does not help the crippled person. The first step toward informed sympathy is the normal person's realization when he sees a crippled person, or thinks of one, that he himself might very easily be as unfortunate. Usually it is not due to his own knowledge, efforts, or desires that he has

July 1, 1919, before operation for the correction of a severe case of bow legs.

October, 1919, after operation. Such results are making happier thousands of children.

escaped. "There, but for the grace of God, go I," said the Quaker. In a recent survey of the cripples in New York City it was found that 63 per cent. were crippled before sixteen years of age, and 37 per cent. were crippled



Club feet corrected by operation. Home for Destitute Crippled Children, Chicago.

after sixteen years of age. It was found also that 23 per cent. were crippled by injury, 21 per cent. by rickets, 16.5 per cent. by infantile paralysis, 9.5 per cent. by amputation, 8 per cent. by tuberculosis, 1 per cent. by syphilis, and that 8 per cent. had been born crippled. Women and men are about equally affected. Suppose you or I through no fault of our own were to become crippled. What then would be our attitude? I am sure we would take courage after the disaster and seek out the best means of training ourselves for an independent position in society. We would want to know how and where we could be treated to lessen our handicap. We would want to know where and how we could be educated and instructed to make the most of our disability. We would want to find out what sort of work would be open to us. All this we would want to know so much the more if our child were crippled. Certainly our attitude toward the word "crippled" would undergo a change. We would no doubt consider it a misnomer, and prefer the term handicapped.

The Proportion of Crippled to Normal Persons

How many cripples are there in the country and how many are there in our community? A recent survey in New York City brought to light the fact that there are about 36,000 in Greater New York. This city has a population of 5,621,000, which means that the ratio of handicapped to nonhandicapped is 1 to 156. Dr. H. Winnett Orr had made a statistical estimate of the number of cripples in the United States. He concludes that in rural populations, where there are few cases of tuberculosis and industrial accidents are rare, the ratio of handicapped to nonhandicapped is 3,500 to 1,000,000, or 1 to 286. Somewhere between these figures lies the actual ratio in any given community of the United States. Missouri may be said to have about 11,000 handicapped persons and Illinois 18,000. There are about 300,000 in the whole country.

Adequate Care for Only a Pitiful Proportion

What is being done in a medical way and in an educational way in the country as a whole and in our community to meet the needs of the huge army of handicapped persons? Private institutions and state institutions are at work on this problem. And there are two sides to the problem; hospital care must lessen the handicap as much as it can be lessened by such measures as surgery, massage, and exercise, and educational and vocational training must give the handicapped person the proper training to take his place in the world as an independent worker. For several decades these institutions have been little garden spots in a desert of indifference.

The operation that corrected the knock knees and club feet of this child will add to her happiness and usefulness throughout life. Home for Destitute Crippled Children, Chicago.

Anyone interested can satisfy himself in a few hours that their work is without equal in its benefits, that within their walls human beings are made over from deplorable, depen-

dent charges on the community, and the family into upstanding, wage-earning, thoroughly independent members of society. How much of the task are these institutions able to accomplish? In the whole country perhaps 4,000 crippled children a year are receiving treatment and proper education. About 75,000 need the same care. And what about the

Sunlight helps crippled bodies and cheers discouraged spirits. The Children's Hospital of the State University of Iowa.

adults who are handicapped, of whom there are perhaps 150,000 needing such care? This problem has never been touched.

The Task for St. Louis

Let us apply the general ratio of handicapped to normal persons to our own community, St. Louis. Let us accept the low ratio of 1 to 226 as a convenient figure for estimation. St. Louis then has about 3,500 handicapped persons. Have we any special schools for their care and education? We have one hospital where this work is done as a special service. We have one home where for years a small number have received attention. We have one convalescent school and home in our county where excellent work is being done for a few children. What about the state of Missouri with 11,000 handicapped persons, a low estimate, within its borders? There is no effort on the state's part to keep pace with other states in this important work.

And how much a little effort in the right direction can accomplish! Last year one of our newspapers became interested in a proposition made by the St. Louis Medical Society to try to learn the number of crippled children in this city and its surrounding country. This newspaper most generously carried for several weeks in its pages accounts of what could be done for the handicapped child, and how. It also asked each day for information regarding any poor crippled child who was not being cared for. The St. Louis Medical Society held an examination of these children on three days of last January; more than 400 children were examined. As a result of this experience the Medical Society concluded that there is a large number of crippled children in our city and the immediate environs who are not receiving any medical care or education. One cannot speak in too high praise of the effort of the society toward improvement, and especially of the spirit of public interest shown by the newspaper that aided in the work.

Traveling Clinics in Illinois

The record of the state of Illinois will bear most interesting testimony as to the need for the care of cripples and as to one method of attack on the problem. Dr. C. W. East of the Illinois Department of Public Health conceived the idea of traveling clinics throughout the state. Several physicians and assistants and nurses visit a given place on a certain day or days. Before their arrival the local physicians and health authorities gather together in a convenient place all the crippled children in the vicinity. They are then examined and proper methods of treatment are outlined. If a child needs hospital care, it is sent to a proper hospital; if it needs educational advantages, it is sent to a proper school for the handicapped child. Dr. East has given me the record of the traveling clinic in Illinois: In 1917, 700 patients were cared for; in 1918, 900; in 1919, 1,300; in 1920, 1,600; in 1921, 2,800; and in 1922, 3,500 have been examined, treated, and started on a proper road to self dependence. As the work has grown in the towns, the local welfare organizations have become interested, and, later, as they saw the need for help, most helpful and active. We

Play is not forgotten in the plans to make crippled boys and girls stronger and straighter.

may look on this as evidence of informed sympathy being aroused to replace an older attitude of carelessness, ignorance, and pity. Dr. East would tell you too that the work is just beginning, and that the hardest part is to overcome inertia and ignorance, on the part of the cripple, his parents, and his friends.

Work of Other States

Nebraska has for twenty-five years maintained a school and hospital at Lincoln. Its record shows that thousands of handicapped persons have been educated and sent out equipped to care for themselves.

Every child in the Children's Hospital of the State University of Iowa is given occupational work, either curative or recreational. It begins early in their career, as is evident from this snapshot.

In most of the eastern states work like this has been carried on for the last fifty years.

But even in the most fortunate communities there is not nearly enough done in hospital or in educational work.

Conditions in New York City

In New York City, where the work has been carried on for some time and as well as it is anywhere in the country, it was found in a recent survey that nearly one half of the children discovered in the canvass were not being treated; probably 1,000 children with Pott's disease, tuberculosis of the joints, and the after-effects of infantile paralysis have never had a diagnosis; about 3,700 whose disease has been recognized have ceased to attend clinics; and more than 50 per cent. of the cripples are not even known to any organization. It was also found that very few cripples attend high school, only 7 per cent. had a special education, 14.2 per cent. no education, 76.7 per cent. a common school education, and only 2.1 per cent. a high school education. Of the children between five and fifteen years, 21 per cent. did not attend any school. The figures from New York City may be taken as typical of the eastern states alone; they do not apply in our middle western country. They show that even where the work is old and well established twenty-eight of every hundred cripples more than fifteen years of age are wholly dependent, and thirteen are only partially self-supporting; consequently 41 per cent. are either wholly or partly public or family charges.

Informed sympathy with this problem—the relationship of the community to its handicapped members—must recognize that what is true of New York City is more than true of our section of the country, where we do not even know the size of our problem. We know only that if you or I, or our child, is handicapped and if we are poor and ignorant of the possibilities of relief and improvement that should be our right, we run an exceedingly small chance of not being a dependent, a beggar, an object of pity, and a public or a private charge for the rest of our days.

The Ohio Society for Crippled Children

Let us look on the brighter side. What is about to be done to help the handicapped? The new development in the state of Ohio is a most hopeful sign. Six years ago a recently formed Rotary Club in a small town was looking for some worthwhile work, and its attention was drawn to a particularly unfortunate cripple with prenatal amputations of both arms at the elbow and one leg above the knee, and the other leg and ankle much distorted. He was twelve years old and had never been to school. Following suggestions of an orthopedic surgeon that operations and an education would help this boy, he was cared for physically and started to school. He is now self-supporting. This Rotary Club was so much impressed with what its sympathetic understanding of this one case had made

Working the jig saw. Such occupations add to the pleasure and the independence of children who are physically handicapped.

possible that it took up the work for other cripples, and as a result there is now in the State of Ohio a society, originally composed of Rotarians, called the Ohio Society for Crippled Children. This society has in the last six years brought about the establishment of special schools in eleven cities of the state with

an attendance of 400 crippled children. Ten more towns are in the process of organizing similar work. Hundreds of crippled children who would otherwise have had no education and have remained shut-ins and dependents are gaining their liberty due to the activity of the Rotary Clubs of the state. In other states the work will soon start in the same way. The governor of Ohio has set aside the week of May 8, which happens to be the birthday of Mr. Edgar Allen, the Rotary Club member who started the work, as Crippled Children's Week. During this week there is state-wide interest in what is being done and can be done for the handicapped of the state.

Shriners Hospitals for Crippled Children

Another movement of greatest importance is that started by the Ancient Arabic Order of Nobles of the Mystic Shrine. About three years ago this body with more than a million membership decided to interest itself in the welfare of the handicapped. At Atlanta, Georgia, a small hospital under the surgical direction of Dr. Michael Hoke had been caring for poor crippled children from the rural districts of the state. This hospital was maintained by the Scottish Rite Masons of Atlanta. The great good done there for crippled children so impressed Mr. Forest Adair and Mr. Freeland Kendrick that they decided to ask the Shriners to undertake a continent-wide program for the relief of the crippled. This organization took up the suggestion gladly, and at present is building hospitals in St. Louis, Shreveport, Louisiana, Minneapolis, San Francisco, Montreal, and Portland, Oregon. These hospitals will be free to poor crippled children. Recently this organization has sent a qualified surgeon, some nurses, and equipment to the Hawaiian Islands to help the cripples there. Our city, St. Louis, is fortunate in having the largest of the hospitals under construction. It will care for one hundred of these children. Back of this hospital is the intelligent interest of the members of the Shrine. Their informed sympathy has visualized a plan that will put within the reach of cripples anywhere in the United States or Canada the open door to independence. Surely such recent developments as this and the one in Ohio should give us courage to believe that very soon the dark days and dependence of the handicapped will be at an end.

Perhaps the war had something to do with the awakening of interest in the problem of the handicapped. If so, the war was not without its benefits to suffering humanity, which offset, in some degree, the frightful burden of wretchedness which it imposed.

Mutual Interests of Community and Handicapped

In any community the persons who are not handicapped must realize that there is urgent need for greater interest in and knowledge of the problem of those who are handicapped. They must realize that, due to their carelessness and lack of understanding, some fellow beings are liable to be shut off from one of life's greatest gifts, independence. They must know that great economic waste is thus being incurred, that this is poor business. They should take to heart the cause of the handicapped because it is a shifting line that separates the fit from the unfit, a line easily crossed. They should strive to make the cause of the handicapped their cause, for more or less selfish reasons if for no other. No high humani-

Useful arts and crafts are taught in most of the schools and homes for such children in order to make them self-supporting and more content with their lot.

tarian altruism is demanded to give to a fellow being that which is his right, and the community that realizes to the fullest this simple fact will be the best community to live in. The cripple in turn owes the community in which he lives his best efforts. He asks more consideration, and he must give more in return.

The community owes the handicapped a wage earning position in its activities. Handicapped persons can use their brains as well as others, sometimes better than others. Handicapped persons can do certain work as well as or better than others. Employers in every community should have a desire to help in this problem. Informed and mutually sympathetic, the community and the cripple will progress in the management of one of the oldest and most difficult problems that humankind has had to face.

The Original Daily Dozen

WARREN T. VAUGHAN

CALISTHENIC exercises are enjoying an unprecedented popularity. This may be accounted for, in part at least, by the deed of some good or evil genius who has set them to music for the phonograph. That they are of ancient evolutionary origin may, however, be suspected as we observe the stretchings and yawnings of the family dog or cat following a postprandial nap.

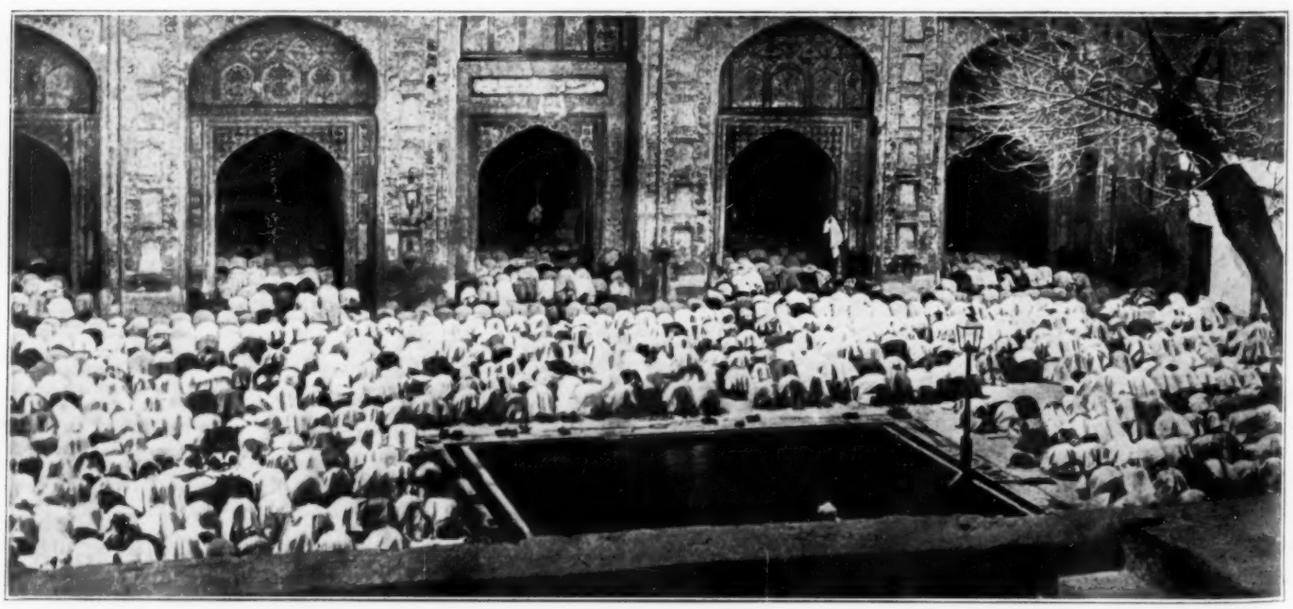
The red man recognizing, subconsciously perhaps, the value of physical suppleness as well as emotional enthusiasm, inaugurated his elaborate war dances. The knight of old, ever ready for the unanticipated in strife, maintained his preparedness by friendly jousting and tilting. The Napoleon of today, as in times gone by, keeps his men in fighting trim with games and contests of strength, nor does he disdain the less noble calisthenics.

True, but these are men preparing for deeds of valor and strength. What inspiration for Edgar in touching toes in the bath room? What brawn to Clarisse as she swings on high the dumbbells? For what herculean task, father and mother, before the phonograph—*one*, two, *three*, four!

In this age of discovering and uncovering ancient kings and customs for our enlightenment, Dr. Vaughan's conclusion that the original daily dozen antedates modernity is another proof that recognition of the needs of the body can often be traced to the days of the ancients. Dr. Vaughan practices medicine in Richmond, Virginia.

Just this: every day in many a way, each of us should be physically fit to wage a successful issue against our lurking enemy, disease. But many of us go our ways, heedless and carefree. Tomorrow will be time aplenty for preparation against the invader. Tomorrow never comes. Our muscles soften. Our vasomotor mechanism, by which we easily adapt ourselves to sudden environmental changes, becomes clogged and sluggish. Peristalsis lessens, and if we will daily cast off the accumulated refuse and poisons, we must saturate ourselves in laxatives.

A short time each day devoted to fairly strenuous physical exertion improves both mind and body. The tired business man discovers to his surprise and, alas, sometimes too late, that a little golf at regular intervals removes the fatigue of which he has been so conscious. Good honest exercise, preferably outdoors, will turn the trick. The trouble with the common garden varieties of setting-up exercises is that they have no incentive, create no enthusiasm. They soon become irksome and are rarely long persisted in. Rhythm adds zest and interest. Thus, the Indian turns to his war dances. And so our genius who has set the exercises to musical accompaniment.



Cleanliness and suppleness of body are developed with religion in the true follower of Islam.

The Mohammedan does not wear his shoes when at prayer, for they are not clean, he knows.

The daily dozen is, however, far, far older than the phonograph.

Consider the Mohammedan form of prayer. Someone has suggested that the salaams and obeisances were incorporated into the Moslem ritual because their originator recognized the value of periodic body exercise. To the Mohammedan, prayer is a religious symbol and at the same time a cleansing or purification of the body. The true believer makes five prayers daily—the first between dawn and the rising of the sun; the second at noon, when the shadows first begin to grow; the third, before the setting of the sun; the fourth, during twilight, and the fifth at some hour of the night.

The faithful, who at each prayer is holding a solemn audience with his Master, is not prepared for such communion until he has rigorously followed certain procedures for the cleansing of the body. The degree of cleansing depends on the nature of the impurities with which one may have been in contact. Some impurities may be effaced only by bathing the entire body. Even the dirt must be removed from beneath the nails. The lesser impurities may be cleansed by less rigorous methods, such as triple washing of the hands, triple washing of the mouth, or cleansing of the teeth. The cleanness of the water and the locality where the ablutions are performed are also definitely prescribed.

At prayer, the faithful, standing erect, faces the direction of Mecca, directs his hands heavenward and pronounces: *"Allah Akbar!"* God is great! He then lowers his arms or crosses them, kneels, recites the first chapter of the Koran and makes a profound reverence, bending forward to the ground. Raising his body he repeats his conviction that God is great and, prostrating himself again, he gives himself entirely into the keeping of the Almighty. This is the great moment of prayer. Now the forehead and the nose must touch the ground, a symbol of the nothingness of man—dust before the Great Presence. Once again the trunk is raised and the legs are crossed beneath the body so that the shins and the back of each foot are in contact with the earth. Again the suppliant prostrates himself while reciting formulas of glorification. Finally he rises.

This gymnastic procedure must be executed twice in the morning, four times at noon, four times in the afternoon, three times at sunset, and four times during the night. There are supplementary genuflections which bring the total to about thirty daily. Cleanliness and suppleness of body are thus developed with religion in the true follower of Islam. Further, the repetition of various prayers exercises the memory as well as the body.

We may assume that Mohammed like Moses was a great hygienist. In all probability neither prophet developed in their entirety the laws attributed to them, but their names stand rather as symbols for the great thinkers of their times. The orthodox Mohammedan

has taken his daily dozen, in rhythm, for centuries, and except when infectious disease has decimated his ranks, the results, so they tell us, are apparent. It has even been suggested that the relative infrequency of appendicitis in Mussulmans may be due, in part at least, to the constant exercise of the muscles of the trunk.

Unfortunately, in Christian and Moslem countries alike, most of us do not follow even the simple formulas prescribed by the greatest of the ancient hygienists. If we would but obey their teachings, the world would indeed be a cleaner, healthier locality, and fourscore and ten would become but little removed from the prime of life.

The Biologic Effects of Race Mixture

S. J. HOLMES

IMMIGRATION brings about sooner or later the mixture of peoples and of distinct races. For the proper regulation of immigration, therefore, we should know whether the mixture of peoples and races is good or bad, from the standpoint of biology and of society.

There seems to be little ground to be apprehensive of harm, on the basis of what is known of biology, with regard to the mixture of peoples within the limits of the white race. There are, I am convinced, considerable differences in average inherited ability as well as in temperamental traits among the nations of Europe which are contributing to our population. Some of these apparently stand below others in native intelligence, and it is not likely that anything will be gained by assimilating them. But this does not imply that the mixture is bad in itself. It simply means that a superior stock had better breed among its own kind rather than mingle its blood with that of a people on a lower level.

Crossing in the vegetable kingdom has often resulted in increased vigor in the hybrid. Is the same true of the animal kingdom and of man? This question is of importance in countries such as ours where all races are represented and have intermarried. Popular conceptions of the results of such intermarriages — aside from the problem they present to society — are often erroneous. Dr. Holmes, professor of biology in the University of California, presents the facts, unbiased by opinion.

Most European peoples are the product of many strains. An Englishman, Frenchman, German, or Austrian might number by the dozen the racial stocks that have contributed to his inheritance. Were we to confine our attention to men of the highest order of genius, a long list could be made of those who are the product of diverse racial ancestry. With all the diversities that there are within the subdivisions of the white race it would indeed be difficult to say whether it would be better biologically for the French, English, and Germans to marry within their own groups or to marry with other Europeans of their own general level of development. All that can be said is that some of these intergroup marriages would result well and others ill, and the same could be said of marriages within any of these countries. Besides, the products of these cross marriages could scarcely represent much greater mixtures than the parental stocks themselves. The hereditary diversities within each country are ample to prevent any injurious effect of inbreeding for a long time to come.

To ascertain the results of the intermarriage of distinct races such as the negro and the white or the white and the Mongolian is an undertaking that should be carried on in a critical and scientific manner and on an extensive scale. At present the whole subject is in a confused and most unsatisfactory state. The many observers who have studied the problem have arrived at the most diverse opinions. Quatrefages and Novicow regard the mixture of races as biologically advantageous. Agassiz, Lapouge, Schultz, and others have been emphatic in their condemnation of the products of race crossing. A favorite criticism of the halfbreed is that he has the vices of both races and the virtues of neither.

Literature on Mixture of Races Inconclusive

There is an extensive literature on race mixture, but from the scientific standpoint most of it is exceedingly superficial and disappointing. It is frequently marred by prejudice, and rarely is any attempt made to separate the social and the biologic factors that conspire to determine the status and the characteristics of mixed breeds. Both the

persons who favor and the persons who oppose the mixture of races appeal to the results of crossing varieties of plants and animals in support of their position, and succeed in finding biologic analogies of the desired kind.

Crossing Sometimes Results in Increased Vigor

Darwin and others have shown that the crossing of plants of related varieties often results in offspring of greater size, vigor, and fertility than either parental type. Numerous experiments have shown that the highest yield of corn comes from the crossing of different strains. The mixed, or heterozygous, state in corn is the condition of greatest growth and fertility. Inbred strains tend to deteriorate, but two such strains when crossed produce a hybrid whose yield commonly far exceeds that of either parental stock. The hybrid state seems to enhance vigor. It is not improbable, as has been suggested, that this phenomenon results from the increased number of separate factors in the hybrid, but, however it is caused, it is a very common occurrence in animals and plants. There have been some observations on human crosses which indicate, at least for stature, that results similar to those found in plants and animals sometimes occur. The measurements of Boas on the height of Indians, whites, and halfbreeds showed that the latter averaged taller than either whites or Indians. Similar results have been reported by Fischer in his study of the Boer-Hottentot hybrids of South Africa. For the most part, however, there seems to be little to suggest that human crossbreeds exhibit that hybrid vigor so conspicuous in the crosses of corn and of many other plants.

Crossing Sometimes Results in Diminished Vigor

Not infrequently, however, cross-breeding in plants produces hybrids of greatly diminished vitality. The products of crossing some varieties of tobacco are small and weak forms. Many tobacco crosses of fair vigor are sterile. Others scarcely do more than germinate before they die. Parallel phenomena may be cited from crosses between varieties of animals. If we attempt to draw conclusions, therefore, regarding race mixture in man from the effects of hybridization among animals and plants we are on very uncertain ground, for we can find analogies for almost any kind of result.

Topinard has made the plausible suggestion that the crossing of related racial stocks might have no bad results, but that the union of distantly related races might produce a deteriorated hybrid progeny. Spencer has claimed that wide racial crosses produce constitutional disharmonies, and Mr. Seth Humphrey in his book on mankind has elaborated on the same idea. These views, however probable they may seem, are based mainly on *a priori* considerations, and these are an unsafe guide. When we turn to a consideration of the actual facts we find that the evidence is inconclusive and in some instances contradictory. Hoffman has reported on the favorable results to physical and mental development of the crosses between whites and Chinese in Hawaii. Many favorable comments have been made of crosses between whites and Japanese. The Anglo-Polynesian hybrids of the Pitcairn and Norfolk Islands have been described as a healthy and prolific stock. Crosses of Indian and negro, on the other hand, have been condemned as a most unfortunate combination, but the evidence from the biologic standpoint is not conclusive. Halfbreeds between Indians and whites do not seem to be deficient in vitality, and the observations of Boas indicate that their fertility is even greater than that of either pure race. The reasons for this difference may, however, be more cultural than physiologic.

The mulattoes, who represent about the widest possible racial cross, have been credited with a relatively weak physique. The measurements of recruits during the Civil War showed that in chest expansion, lung capacity, and general strength the mulatto was on the average inferior to both whites and negroes. The opinions of most of the examining surgeons of the army at that time were distinctly unfavorable to the mulatto as a physical product. We have no adequate data on the fertility of the mulatto as compared with that of either component race, although it has been asserted repeatedly that the mulatto tends to be sterile. The Boer-Hottentot hybrids studied by Fischer had families averaging 7.7 children apiece, and this is certainly not indicative of waning fertility. The mulatto's cranial capacity, according to Hunt and Topinard, is intermediate and depends roughly on his proportion of white blood. There is abundant evidence that the mulatto is superior intellectually to his black brother. Almost everywhere the leaders of the negro race have white blood, as have almost all of the race who have achieved distinction in any intellectual field. The evidence of the army tests for mentality is that not only does the mulatto score higher than the negro, but also that he makes a good rating according to the proportion of white blood in his composition. Confirmatory evidence is also furnished by tests of mentality of negroes and mulattoes in schools.

Information furnished by tests of mentality concerning the inheritance of mental traits is as yet meager.

Mentality of Racial Hybrids

An impartial consideration of available data on the mentality of interracial crosses will, I believe, lead one to the view that the mentality of the crossbreed is somewhere between that of the parental stocks. Hereditary factors influencing mental development are probably numerous. Under these circumstances, as in the inheritance of the color of skin, we should expect inheritance to approach the so-called blending type. Superior races have nothing to gain and much to lose by amalgamating with those on a lower level. When it comes to distinct races on approximately the same degree of intellectual development, for example, the best of the Caucasians and the best of the Chinese, the product of race crossing may be on the same high plane of mentality. It must be confessed that our knowledge on this score is neither extensive nor critical, and we need much fuller information before drawing conclusions that would influence practice in regard to the fusion of races.

Much of the condemnation of the crossbreed doubtless results from his infusion of inferior blood combined with the frequently demoralizing influence of his unsettled social status. There may, however, be certain crosses that are unfortunate simply as combinations. Quite apart from intelligence, there are numerous possibilities through the combination of affective traits of producing proclivities to all sorts of moral character, good and bad. These results are commonly evaluated not from the biologic standpoint, but in their relation to harmonious and effective social life. Here is an almost unexplored field which must await the development of a better technic for the study of the instinctive and emotional traits of man before much progress can be made. At present no more than a good beginning has been made in this direction.

The student of human heredity may not be in a position to prove that in general the crossing of races, even very distinct races, is to be condemned. Aside from the alleged inferior physique of the mulatto there is little to indicate that human hybrids are ever conspicuously inferior because of their hybrid origin. They may be inferior to the superior race. They are probably superior, at least mentally, to the inferior race. The crossing of races on different mental levels is therefore inadvisable. But before advocating or encouraging the mixture of different but equivalent races we should have fuller knowledge than we now possess of just what the results will be. The inheritance of a superior race is a very precious possession, to be conserved at all costs. Our lack of knowledge of the results of race crossing should not be used to defend it because we cannot prove that it is bad; it should be used rather to counsel caution because we do not know that it is not bad. In the light of our ignorance about race crossing the wisest course is to go slow and play safe. Our ignorance is no justification for taking a leap in the dark. This needs especially to be emphasized in the light of other considerations drawn from our knowledge of mendelian segregation.

Maladjustments in Descendants of Crossbreeds

Formerly inheritance was considered typically blending, and subsequent generations of a racial cross were thought to be very much like the first. This is now known to be far from correct. Characters that appear to blend in the first generation of a cross segregate out in various combinations in the second and later generations, and we get in wide crosses a motley array of the most diverse forms. This is because the parent types differ in a considerable number of hereditary factors. The more different factors there are, the larger the number of different combinations that can be made from them. And however harmonious the blend made in the first cross, the second generation is liable to produce many unfortunate combinations of traits.

In the structures that make up the human head and face are many characters that segregate out in various ways in the second generation of a racial cross. In each race there is a fairly harmonious adjustment of shape of skull, relative size of facial bones, size and shape of jaw, size of teeth, and so forth. In a cross of different races one may observe narrow jaws with broad head, small jaws with large teeth, and various other jumbles of anatomic characteristics, due to the varying dimensions of these several characters and their segregation in different combinations, which certainly detract from comeliness if not from effectiveness of physical organization. Kingsley, Talbot, and other writers on dental anomalies attribute a large part of our dental maladjustments to the intermarriage of different racial stocks. Large teeth set in small jaws are a fertile source of trouble, and there are other similar maladjustments.

Reversion to Parental Types

If species crosses are very wide or if species of distinct genera have been found to produce fertile hybrids, the progeny in subsequent generations may revert almost completely to the parental types. This is a very peculiar phenomenon and quite different from what would be expected according to the principles of mendelian inheritance if all possible germinal combinations were able to develop. Goodspeed and Clausen have developed the idea of special reaction systems characteristic of

the several species. Such systems consist of harmoniously functioning groups of factors, but in the second generation of a wide species cross, those forms with a part of one system and a part of another do not survive. Only those which have a fairly complete system belonging to one or the other parent species succeed in developing.

Alternative Inheritance of Traits and Variability of Characteristics

Comparatively little scientific study has been made of the second generation of human hybrids. The most detailed investigation of the subject is Fischer's work on the Rehobother hybrids of South Africa, and these give much evidence of the alternative inheritance of many traits and a high degree of variability in physical characters and intelligence. One cannot look over the photographs of the many faces of the hybrid population that are given in Fischer's book without noting the almost kaleidoscopic combinations of ancestral features which they exhibit. If among the great diversity of human beings which follow the first racial cross a considerable proportion should prove to be undesirable products—as one might reasonably expect—the result would be unfortunate. It would take a very long time for a population resulting from race mixture to become a fairly homogeneous group, and in the meantime it might suffer from the embarrassment of a considerable proportion of poor grade humanity.

Tentative Conclusions

The crossing of distinct races is not demonstrably followed by a marked decrease in vitality in the hybrids, except possibly in the case of the mulatto.

There seems to be no good evidence, on the other hand, except in the height of certain halfbreeds, that there is any increase of vigor in human hybrids such as is often observed in crosses among animals and plants.

There is no clearly demonstrated loss of fertility, despite many assertions to the contrary, in crosses of the most divergent races of mankind.

The mentality of crosses between races of different degrees of mental development seems to be somewhere between the mental levels of the parental races.

Even when two distinct races are on the same mental level, extensive crossing should not be encouraged until more is known concerning just how it is likely to work out. Not only is our knowledge of the blending in the first generation insufficient, but also we have little accurate information on the more important subject of the varied products of subsequent generations. Here we find broken up those combinations of ancestral heritages which have been worked out through a long struggle for existence. There is good ground for believing, on the basis of our knowledge of genetics, that a great many of the products of mendelian segregation are not particularly happy combinations. This suspicion is more or less confirmed by a casual inspection of the motley products of so-called race fusion. There may, however, be advantages in the crossing of some races, but the fact should be established before crossing becomes so extensive as to threaten the persistence of either pure race. Concerning race mixture in general, it is well to adhere to the old maxim: Be sure you are right before going ahead.

For many nations of the earth the problem of race crossing is a very practical one. In many parts of the globe the amalgamation of distinct races is actively going on, and the process, if carefully studied, would yield information as to what to follow and what to avoid.

"WHAT'S THE MATTER WITH FATHER?"

"What's the matter with father?" The matter with father is that he is an artful dodger. As a neighbor recently confessed to me, "When it comes to parental discipline, I either skid or skidoo." Father is a consulting rather than a practising parent. He is like that curious South American lizard which, when pursued, drops its tail in the pathway to interest the pursuer, while it itself escapes. Father makes it his conscientious business to give his family money and everything they need—except himself. "I never had a father," said a friend to me. "Did he die when you were quite young?" I asked with sympathy. "Oh he isn't dead; he's a Shriner."

—The Child-Welfare Magazine.

Sun Stroke and Heat Stroke

MORRIS FISHBEIN

EVER since Shadrach, Meshach, and Abednego came unharmed from the fiery furnace into which they had been cast at the behest of Nebuchadnezzar, the question of how much heat the human body can sustain unharmed has troubled the minds of scientists and, particularly, of industrial engineers. Near the equator persons work in temperatures as high as 130 F. In the engine rooms of steamers plying in tropical waters temperatures as high as 150 F. have been registered, and stokers have served in the engine rooms without collapsing. Then the queer persons of the circus, known as "human salamanders" have indulged, for monetary return, in extraordinary exhibitions of their ability to withstand heat. Unfortunately all the records of these thermal performers date back to before 1850, when scientists were not one half so careful in controlling experiments as now, nor one half so skeptical as the modern investigator in verifying results.

"If only we could have a thunder storm," you wish on a sultry summer day. "I feel as if I couldn't breathe and were getting steamed." On hot days when the humidity is great, occurs the largest number of prostrations from sun and heat. For the same reason persons who work in steam cannot endure temperatures as high as can persons who work in a dry, hot atmosphere. The explanation of this and of the condition of the body due to heat prostration is here given by Dr. Fishbein.

Martinez, known as the French salamander, was reported about 1827 to have remained in an oven, built in the middle of the gardens of Tivoli, for fourteen minutes when the temperature in the oven was 338 F. Chamouni, known as the Russian salamander, who exhibited about the same time, would enter an oven with a raw leg of mutton and remain inside until the mutton was well baked. He eventually lost his life in the performance of this feat, and modern scientists are inclined to believe that something must have gone wrong with his insulating apparatus. The savages indulging in fire worship submit themselves to intense heat, apparently without serious results, but the performances give much opportunity for fraud, and unquestionably the heat is not sustained for a long period.

The Incidences of Sun Stroke and of Heat Stroke

About the time the fat traveling salesman begins to mop the beads of perspiration from his brow and to inquire of his casual acquaintances "Is it hot enough for you?" the ambulances of the police departments in large cities begin to transport to the city hospitals victims who have indulged themselves in sunlight, particularly in sun heat, not wisely but too well. And throughout the year in the first aid stations of foundries, sugar refineries, mines, bake shops, steam vessels, and furnaces, men are treated for the same ailment who have not seen the sunlight for many hours. Essentially, the conditions known as sun stroke and heat stroke are the same. In 1916, Chicago suffered an unusual period of long sustained high temperature. In that year 535 persons died from sun stroke or heat stroke, whereas in 1915 only four deaths resulted from this cause. The condition is therefore ordinarily not a serious one, yet many persons suffer unduly when the thermometer begins to rise because of lack of knowledge as to how physical disturbances may be prevented.

Causes of Heat Stroke

Some years ago a special study of heat stroke was made by two physicians who were interested not so much in heat stroke as such as in one of the important symptoms—so-called wet brain—of which more will be said later. These investigators, Dr. Pierce McKenzie and Dr. E. R. LeCount, working in the laboratories of Rush Medical College, found that the meteorologic or climatic conditions responsible for heat stroke are rare in Europe, but common in the Mississippi Valley and in the states of the eastern and southern coasts of this country; in general, heat stroke occurs in river valleys and in lowlands. The symptoms of sun stroke appear to be due to inability of the air about the body to receive any more moisture, because it is already thoroughly saturated, and to increase of temperature due to natural summer rises of the thermometer. When heat stroke occurs in a boiler room or in a hot kitchen it can therefore result from the same causes. In other words, the light rays from the sun appear to have little if anything to do with causing the symptoms.

Moreover, there are certain contributing causes which tend to intensify the effects of the two main causes. If the clothing is tight and heavy or if the person drinks too little

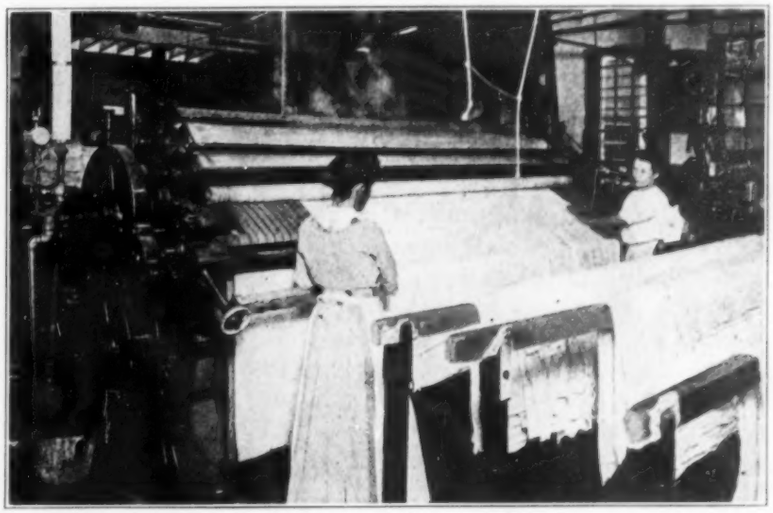
water in the summer, there is lessened cooling of the surface of his body through evaporation of fluid from it, and other heat regulating devices of the human machine which work in much the same way as the cooling system in a motor do not function as they ordinarily would.

International.

The stoker for a large coal burner works in hot, close quarters.

Feeling and Actions of a Person with Heat Stroke

When heat stroke occurs in a hot boiler room, laundry, or similar place, the person first complains of dizziness or that he is "sick at his stomach," nauseated, and weak; and finally he may faint. In such instances, he may have a profuse perspiration; his skin may be cold and clammy; and if his temperature is taken, it may be found to be below normal. His pulse is weak, and if the onset of the heat stroke was slow, he may have diarrhea. If, on the other hand, the stroke occurs while the person has been for some time out in the sun, the physician finds on his arrival that the patient is exceedingly hot, with a dry skin, a red face, swollen veins, and throbbing pulse. If this patient's temperature is taken, it will be found to be quite high, sometimes above 106 F., and if the patient is in a serious condition, possibly as high as 110 F. Such patients are very restless, their breathing is labored, the pupils of the eyes, dilated at first, may become contracted, and the patient may sink rapidly into that type of unconsciousness known as "coma." These two types of heat stroke are known as "heat asphyxia" and "heat fever," the type depending on the manner in which the victim reacts to the influence which has brought about his condition. There are many other types, depending on the symptoms which the patient may have, but the main classification is into the two definite groups which have been mentioned.



The steam from the flat-work ironing machine causes excessive heat and humidity.

(Courtesy of the Massachusetts State Department of Public Health.)

The Causes of the Symptoms

Many experiments and investigations have been conducted in an attempt to show the reasons for the symptoms appearing during heat stroke, because it is an exact knowledge of such symptoms which enables the observer to outline methods of prevention. When the bodies of persons who have died from heat stroke are examined, it is found that a larger quantity of fluid than usual has accumulated in the brain and in the lungs. Other changes are degeneration of the tissues of the liver, kidneys, and heart; often there are little spots of blood in the mucous membranes and in the skin; and the glands known as the adrenals, which lie just above the kidneys, are found to have a lessened amount of that part of their structure which is essential to the life of the individual. It has seemed to investigators that the significant fact is the accumulation of water in the tissues of the nervous system, and it has been interesting to speculate as to the mechanism by which this occurs and on its relation to the cause of death. A most interesting fact in this connection was discovered through an experiment performed by Dr. R. T. Woodyatt of Chicago, who was able to show that the symptoms of heat stroke, par-

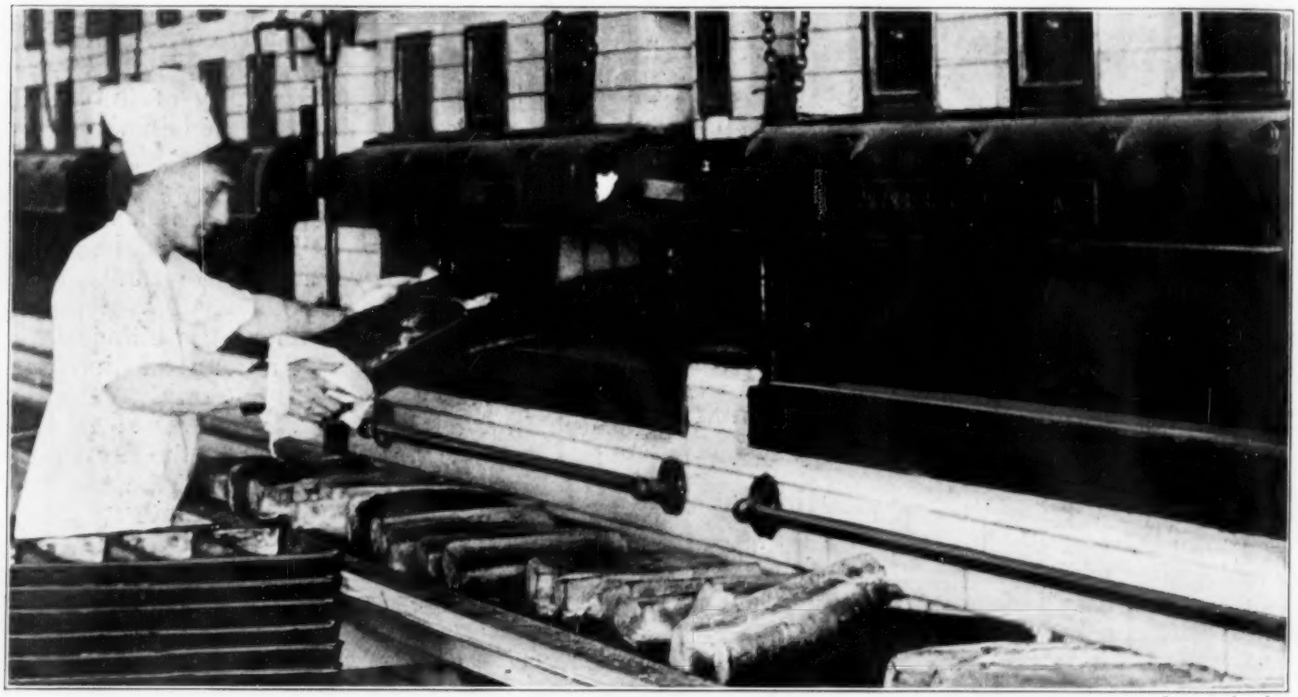
ticularly that type known as "heat fever," may be produced by withholding water from the animal body—dehydrating it—or by producing a similar effect through the injection of large quantities of glucose solution. When this is done, an animal develops a fever as high as from 108 F. to 112 F., and with it chills, fever, shaking, and rapid breathing. Then when water is added to the body, the symptoms disappear.

The Prevention of Heat Stroke

As may be surmised from the description of the causes of heat stroke already mentioned, its prevention is dependent on proper clothing, adequate amounts of fluid, and a satisfactory diet. During hot weather persons should eat lightly, particularly of fats and sugars, which produce much bodily heat. They should take a sufficient quantity of water, at least eight or nine glasses a day, and should clothe themselves in light garments of such character as to permit diffusion of heat from the body and evaporation of water from the body surface.

One hundred and fifty-eight victims of heat stroke were examined during the 1916 period when so many deaths from this cause occurred in Chicago, and it was found that many had had symptoms of weariness for several days before succumbing. Others had complained of headache and dizziness and great thirst, and still others had had nausea and vomiting. A great many persons, however, had had no advance indications that they were to be subjected to such collapse. Patients who had had several days of disturbing conditions suffered from symptoms resembling those of heat asphyxia, heat prostration, whereas those who succumbed suddenly were more likely to have high fever and the symptoms of heat stroke.

A great many investigators have reached the conclusion that coincident with heat stroke there is an accumulation in the body of poisonous products of digestion, called toxins, and that the lack of elimination of such substances is definitely associated with the appearance of serious symptoms. It therefore is desirable that the bowels be kept open and that the kidneys be flushed thoroughly by sufficient quantities of fluid during the hot months.



International.

This is an up-to-date bakery, but usually the larger the plant, the greater the heat.

The Treatment of Heat Stroke

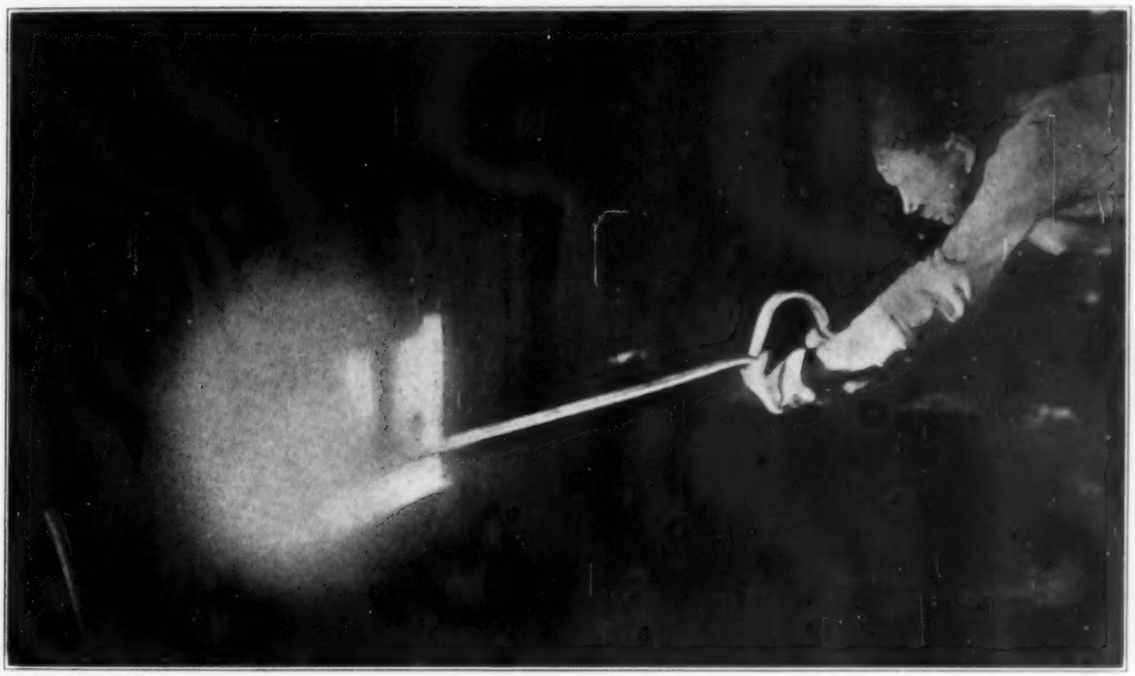
When the person who has been unduly subjected to natural heat or to the hot blast of a furnace or the superheated atmosphere of a laundry complains of weakness or faintness, or perhaps falls unconscious, he should be removed at once from the place of excessive heat. If he has been out of doors in the sun he should be taken immediately into the shade, and as quickly as practicable into a house or to a hospital. He should be placed recumbent in bed in a cool and well ventilated room. The clothing should be loosened so as not to interfere with the breathing or with the circulation of the blood. If the patient is a workman, his working clothes should be removed. If the temperature of the patient is low, hot applications should be placed around the arms and feet so as to restore the circulation and keep the patient warm. If

the patient's temperature is at all high, on the contrary, he may be put into a tub of cool water; his head should be supported and the body should be vigorously rubbed with ice. The temperature usually remains more or less stationary and then falls rapidly. As soon as the patient's temperature has fallen as low as 101 F. or 102 F., he should be taken out of the tub and kept warm. It is well, in every case, to secure medical advice immediately, as it may be necessary to administer drugs for the care of the heart and the failing circulation. Ordinarily the ice bath should not be continued longer than from twenty to forty minutes, but it may be repeated after an interval of three or four hours, if the temperature should rise again. If the patient's temperature is not so high, or if the bath is impracticable, he may be placed on a cot over which a rubber blanket has been spread, wrapped in a sheet wrung out of cold water, and then rubbed with ice. Sometimes it is possible to sprinkle the body with cold water and then to direct an electric fan over it so as to cause rapid evaporation of the water and cooling of the body.

In view of the fact that there is usually an accumulation of acid products in the system, many physicians give alkaline fluids and remedies to victims of heat stroke in order to counteract the effects of the acids.

After-Effects

Many persons who have suffered either from heat exhaustion or from heat fever suffer more or less from the effects of heat during the remainder of their lives. Such persons particularly should avoid, as far as possible, overheated rooms and exposure to the direct rays of the sun during the summer. They should take frequent cool baths and, if possible, bathe in the sea during the summer months. They should dress lightly and drink plenty of water; avoid indulgence in alcoholic and fancy drinks; and keep their heads as cool as possible. When there is an excess of moisture in the air, or, in other words, when the humidity is high, the precautions should be doubled, for it is excess of humidity which is largely responsible for delaying evaporation from the surface of the body. Some persons who have suffered from sun stroke find that the memory is impaired afterward, and that they never have the same mental ability and memory as before this unfortunate accident. In such cases, no doubt, the accumulation of fluid in the tissues of the nervous system has been, to a great extent, responsible for producing this sequel to the disease.



The puddler stands in the full heat of the furnace and works his rod through a hole in the door.
(Fitch: The Steel Workers. Courtesy of The Russel Sage Foundation.)

The Summer Care of the Baby

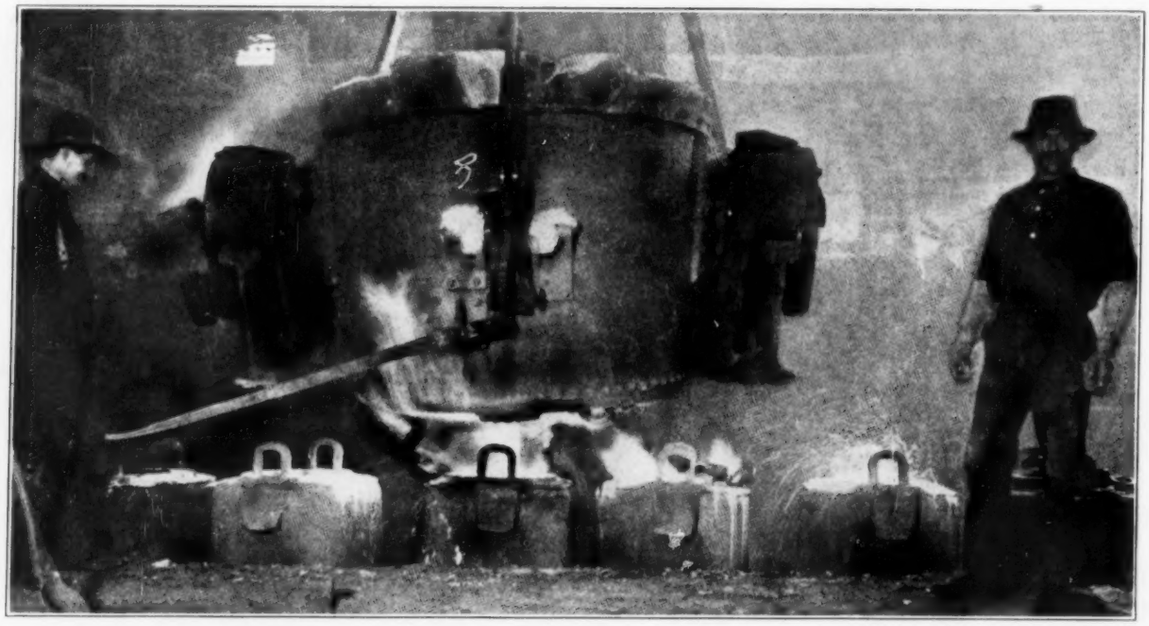
It is not at all unusual for infants and young children to suffer from the effects of extreme heat, and when a child is suddenly taken ill in hot weather, without any apparent reason, physicians look promptly for the symptoms of heat stroke or heat exhaustion. In any event, if the child is suffering with a high temperature and if it is reasonable to believe that it has been exposed for some time to heat, it should be placed in a cool, airy room and given a sponge bath with cool water and plenty of cool water to drink. The child should, of course, be clothed very lightly

during the summer months; it should not be swaddled in unnecessary garments. If the outdoor temperature rises to 85 F. or higher, a baby is comfortable with merely a light diaper and a light shirt. Fresh cool air is important, and the baby should be kept in the open as much as possible.

Heat in the Industrial Plant

As has been mentioned, hard work in a hot and sultry atmosphere may, for a time, become the lot of almost any workman. Stokers and firemen, smelters, puddlers, blast and electric furnace men, steel mill and foundry workers, blacksmiths, glass blowers, kiln and pottery men, bakers, cooks, miners, tunnel workers, and maltsters are constantly exposed to excessive heat. Besides these, workers in breweries, laundries, kitchens, hot houses, tanneries, canneries, and sugar refineries are exposed also to excessive humidity. If the air is kept constantly in motion, they may work in temperatures as high as 150 F. without serious effects. Puddlers and electric furnace men are frequently exposed to temperatures as high as 212 F. for very brief periods without apparent serious injury; but the limit of tolerance is not easy to determine and certainly is not the same in all men. One of the most serious effects of such heat in furnace workers is colic and muscular cramps, sometimes called "heat cramps." Another condition very frequent among them is the so-called acute cold, which is usually due to the pernicious habit of the employees of passing from the overheated atmosphere to outdoor air. All of these unfavorable influences may be guarded against. A radiant heat can be reduced or its effects mitigated by screen, air blasts, and proper insulating devices. The workers also should be urged to reduce the amount of clothing worn and to drink sufficient quantities of pure water. In all hot working zones there should be at least a perceptible current of air.

The matter of clothing is important. Whereas clothes obstruct loss of heat from the body, at the same time the effects of the heat on the skin are lessened by a sufficient amount of covering. A man clothed and exposed to a temperature of 64.4 F. loses about 79 calories of heat an hour, whereas the same man naked loses 124 calories an hour. In the hot, humid kitchen of a railway dining car, or in a laundry in midsummer, it is possible for the workers to reduce greatly their amounts of clothing, but it is not possible for the workers in blast furnaces or for steel men to reduce their clothing since the heat may produce serious burning or irritation of the naked skin. Under such conditions the only prevention is in the reduction of the length of time that a person remains in contact with the heat. Men who must work in great heat, should do so only in short spells, and should be given sufficient time to recuperate from the weakening effect of the hot atmosphere.



The steel pourer's platform. Molten iron is poured from the ladle cars which run on a track in front of the furnaces. (Courtesy of Carnegie Steel Company.)

Scientific Nutrition and Public Health

III. A Nation-Wide Experiment in Human Nutrition

E. V. McCOLLUM

OUR knowledge of human physiology has been derived in no small measure from studies made on animals. So important is animal experimentation for human welfare that the medical profession has for many years labored to prevent the success of misguided persons who wish legislation to tie the hands of the scientific investigator. As in other fields of physiology, so in the field of nutrition, the fundamental principles of the value of foods and the body's need of foods have been learned in great measure through systematic experiments on animals. Most of these experiments could not justifiably have been conducted on human beings.

Egypt is a country adapted to the production of cereals. The Egyptians ate cereals centuries before they became popular in any other country. The Egyptians had and now have poor teeth. During the last seventy-five years Americans have become a cereal-eating people. Have they suffered? Dr. McCollum says that they have. Next month he will discuss the dietary reform which he believes is necessary.

Study of Animals' Need of Foods

All knowledge derived from observations on animals must, of course, be carefully correlated with our knowledge of human physiology and chemistry, and any deductions concerning the application of studies of nutrition in animals to practical nutrition in man must not run counter to human experience.

In the second installment of this series was described how, about the year 1900, animal husbandrymen, studying the problems of nutrition for animal production, arrived at an appreciation of the fact that certain combinations of foods, in certain proportions, give better results than certain other rations of a similar chemical composition. In the studies which Professor E. B. Hart and I carried on for a number of years, it became clear that young farm animals failed to grow appreciably when fed only certain individual foods, such as the wheat, oat, or corn kernel. Even mixtures of these grains proved to be inadequate for growth. Moreover, the complicated food mixtures, provided on many well regulated farms, including such a variety as corn, rolled oats, bran, and flaxseed oil meal—diets derived exclusively from the seeds of plants—fail to produce pork economically or to meet the food needs of brood sows. Sows on such a diet do not give birth to young of great vitality.

Diet of Most Americans Does Not Meet Animals' Need of Foods

Observations such as these led me to consider critically the dietary of the people of the United States and of other regions of the world where a similar food supply is available. It required little study and observation to bring to light the fact that the diet of the human family in the United States and of some other countries is made up largely of foods which would not give satisfactory physical development to any species of animal on which nutrition studies have been conducted. A surprizingly large part of our food is from highly refined cereal products, such as bolted wheat flour, degerminated corn meal, polished rice, and rolled oats, sugar, potatoes, and meats from the muscle tissues of animals. It has been found impossible in numerous trials to prepare any combination of these foods that will meet the food needs of an animal.

Obviously the next question was a consideration of whether or not the nutritive needs of man are different from those of the lower animals. This necessarily took into account diet and physical condition.

Comparison of Our Diet and Physical Condition with Those of Our Ancestors

Have we and our ancestors for long periods of time been taking foods essentially like those which we take today? If this question can be answered in the affirmative, we need go no farther, for it would then be apparent that we need not have fear of physical damage greater than that with which we are familiar through the history of the race. We might profitably consider the possibility of physically improving ourselves and our descendants over our ancestors, but if we are in any way physically inferior to our ancestors, according to this hypothesis it could not be attributed to the quality of our diet.

But is the present generation of Americans physically just as well developed as were our ancestors? If it is shown to be, it is obvious that even if the diet is now different from that

of former generations, the changes have made no difference in vigor and well-being.

We Eat More Cereals than Our Ancestors Ate

Both of these questions may be answered briefly, for an abundance of evidence is at hand to decide each of them. Our diet is now quite different from that of our ancestors, even of those a hundred years ago. We are eating more cereal products now than any group of human beings of the white race have ever eaten, except perhaps those in ancient and modern Egypt. No people has ever before in human history taken so much sugar as we do today. A hundred years ago approximately eleven pounds of sugar to the person was consumed yearly in the United States. Today the per capita consumption is not far from ninety pounds yearly. This means almost a quarter of a pound of sugar a day for each person throughout the year. Even if the eating of sugar had no ill effect other than crowding out of the diet other foods which have a greater value, the consumption of so large an amount of this ash-free food, which is a pure carbohydrate and does not contain a trace of any of the four recognized vitamins, this would be sufficient reason why we should seriously consider whether the present practice is physiologically sound.

A stunted and half bald rat whose development was interfered with because its diet was composed too largely of refined cereal products.

Cereals Almost Lacking in Vitamins

But even though we are consuming more cereal products than our ancestors in the remote and near past consumed, there is another factor in the handling of our cereal foods which is of even greater significance than the total amounts which we eat—the manner in which they are milled. The roller mill process for making flour was invented in 1879. It was perfected for two reasons: whole wheat flour does not keep well, and it is desirable to remove the bran layer of the kernel and the germ. A white flour could not be made from hard winter wheat which was first being grown extensively in the northern states and Canada about that time. The removal of the bran makes a lighter flour, and the removal of the germ greatly improves its keeping quality. The bolted flour from which our bread is made is poor in all the known vitamins. It is perhaps more nearly accurate to say that it contains but a trace of one of them and none of the others. It is moderately rich in phosphorus and exceedingly poor in calcium. This is a matter of considerable importance which will be discussed in connection with rickets.

Our present day diet of white bread and other cereals, peas, beans, meats, potatoes, and sugar, a list of foods which forms at least 90 per cent. of the diet of many American families for months at a time, has become established because of conditions associated with our development into an industrial nation. In a great many homes the food supply is surprisingly monotonous and contains almost no fresh vegetables and fruits. Conditions were different less than a century ago.

Steam transportation by rail or boat is less than a century old; before its advent every neighborhood tended to be agriculturally sufficient. More attention was paid to gardening. There was a mill within a few miles of every household and a bag of grain was taken to be ground into flour or meal about once every two weeks. The household bread was made of whole wheat or corn. The keeping qualities of the flour were not a matter of importance because the supply was replenished so often. Now several months may intervene between the milling and baking of flour.

Cereal and Leafy Diet Adequate

It was pointed out in the preceding article that in animal experiments, a diet consisting largely or wholly of cereal grains produces normal growth, provided the cereals are supplemented with a liberal amount of leaves of plants. The leaf has dietary properties which are unique among vegetable foods; it is essentially complete from the dietetic standpoint, as is shown by the fact that for countless generations the herbivorous animals, such as the cow, sheep, horse, goat, and deer, have subsisted entirely or almost so, on the leaves of plants, especially grass. There are places in Arizona and California today where cattle and horses are fed almost exclusively on alfalfa hay. At least half of the human race is now living on a diet which, in its main features, corresponds to a cereal and leaf diet.

The people who live mostly on cereal and leafy foods are the inhabitants of the great monsoon region of Asia, from India along the

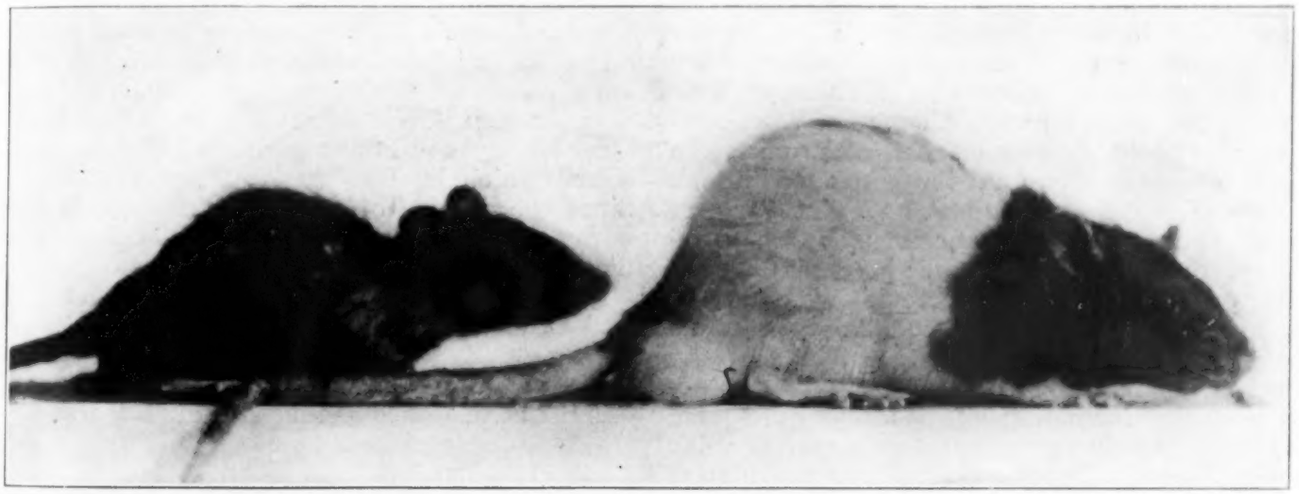
southern and eastern sections of that continent, including Japan. Here they can cultivate no cereal other than rice, which has been grown from time immemorial. The rainfall is entirely too great to allow wheat, corn, oats, barley, or rye to develop. Rice grows mostly under water during the developmental stage before ripening of the grain, so that the plant does not have to compete with grass. This is an important matter, for the farmers of that region never had implements with which they could eradicate grass. In this steaming climate vegetables, such as cabbage, watercress, sweet potato leaves, spinach, and at least twenty plants for which we have no names, are readily grown in large quantities, and these together with root vegetables of several kinds, such as radishes, sweet potatoes, taro, and manioc, furnish the vegetable portion to the human population. A certain amount of fish, pork, and eggs also enters into the diet of these oriental peoples.

Their diet differs from ours mainly in two respects. They eat relatively large amounts of green vegetables, of which we eat little, and they have never had appreciable amounts of dairy products, a moderate amount of which more or less regularly enters into the diet of man in America and Europe. Either of these classes of foodstuffs, taken in large enough amounts, effectively supplements the diet of white bread, muscle meat, potato, and sugar. Thus a diet of cereals and leafy vegetables may be satisfactory for the support of growth, as may a diet of cereals and milk. The leaf and milk have been designated "protective foods," since they can correct the deficiencies of the foods that serve us as staples—foods lacking, wholly or in part, in one or more of the nutrient principles without which the well-being of the body cannot be maintained.

Industrial Development of Country Harmful to Nutrition of People

Our nation-wide experiment in human nutrition during the last fifty to seventy-five years has been an attempt to live on a somewhat limited number of staple foods, several of which have been subjected to drastic milling (cereal foods), while others (sugar, starch, syrups, molasses, and confections) represent essentially pure carbohydrate preparations. The physiologic effects of such a dietary change could not be predicted because until the last few years the nature of the faults in such a dietary regimen were not understood. For animals, the bread, meat, potato, and sugar type of diet is inadequate. Is it likewise inadequate for man?

There is only one way in which we can accurately judge the comparative physical perfection of human beings of any time and place in the past with those of the present. Art and literature have so idealized or exaggerated the individual in appearance and achievement that we cannot rely on either for accurate information. It is to the archeologist that we must turn for information about the physical development of our ancestors. The bones and teeth are the tissues most easily affected by food and conditions of living during life, and the ones which longest resist decay after death. We may profitably compare the bones and teeth of our generation with those of our ancestors, and with certain other people of the past and present, in order to discover whether or not our present diet is proving satisfactory.



The rat on the right had a satisfactory diet, as is shown by its size, fine coat, and normal attitude. The rat on the left was of the same age, and its diet was the same except for the character of the fat which it contained. The large, well nourished rat was given 1.5 per cent. of butter fat, the small one 5 per cent of cottonseed oil. In this case the faulty development on a diet largely composed of cereals—properly supplemented for the one rat—lay in a deficiency in the vitamin A, which is abundant in only certain fats.

Comparison of Teeth of Ancients with Teeth of Contemporary Peoples

Sir Armand Ruffer, in discussing the abnormalities and diseases of ancient Egyptians' teeth, from the results of his studies on mummies and skeletons, points out the fact that they were greatly subject to the formation of pus in the tissues around the teeth, and, to a lesser extent, to decay. The result was the frequent occurrence of abscesses of the bony sockets of the teeth, which he found to be common at all times in Egypt. The teeth of the present generation of Americans and of Englishmen and Scotsmen are exceedingly poor. Rickets was of common occurrence among the ancient Egyptians. Today in the United States few infants and children are escaping at least mild attacks of rickets.

Sir Armand Ruffer also cites the observations of several archeologists on Roman and Early Briton skeletons, which show clearly that decay and defects of the teeth of all kinds were far less common in the Roman and British possessions then than now. Today it is asserted by competent observers that 90 per cent. of the children of public school age have from one to eleven unfilled cavities in their teeth. No such a high incidence of tooth disease has probably ever existed in the past. To what causes can we attribute this condition?

The Egyptians seem to have had poorer teeth than any other ancient peoples. And Egypt in the western hemisphere was almost the only place where cereals were grown extensively in ancient times. This was in no small measure due to the fact that the Nile overflowed its valley each year and thus prevented the formation of a tough grass sod, which is necessary to effective grain farming with primitive implements. Grass has always been the great enemy of agriculture, and grain farming was never possible on a large scale until the invention of the modern steel plow, the reaper, the thresher, and the steam engine for transportation. With these inventions farming of a new type became possible in regions which formerly were grassy plains. The wheat belts of the Americas, Russia, Australia, New Zealand, Roumania, and other countries have been developed within three quarters of a century. We have tried to change the nature of our food supply on a large scale without inquiring whether the changes were fraught with danger, as they actually appear to have been.

More Nourishing Foods Needed

Some years ago I began to call attention to the fact that the effectiveness of the hygiene of the mouth and of the repair of the teeth had been overrated, and that the reason for the great prevalence of decay in the teeth of present day Americans lies in the fact that during prenatal life, infancy, and childhood, they do not develop good sets of teeth. The enamel is not put on as well as it should be. The root canals do not become finished properly. In childhood and in adult life the diet does not protect the teeth and bones from deterioration. We now understand that certain dietary conditions can readily be established which lead to the destruction of bone. Since the dentine of the teeth is a part of the bony skeleton, it is affected by such faulty dietary conditions.

The faulty skeletal development and the bad teeth of Americans of today I believe to be essentially the result of poor nourishment during the developmental period. There is but one effective remedy—that is a dietary reform.

[The concluding paper in this series will appear in Hygeia for August.]

SEEING IS BELIEVING

The nutrition exhibit sent by the United States Public Health Service to the Centennial Exposition now in progress at Rio de Janeiro has had a marked success. The exhibit consists of two tables, at which figures of children, about ten years of age, sit at dinner. The two meals look equally appetizing, but one, it is noted, includes no milk, vegetables, or fresh fruits. The "children" at this table are colorless, with dark circles under their heavy-lidded eyes. The "children" at the other table, where milk, fruit, and vegetables are spread, are rosy cheeked, bright and laughing.

Both parents and children are, it is said, much impressed by the exhibit. The space is always crowded with mothers and teachers, pointing out to wide-eyed youngsters the difference in the appearance of the "children" who drank milk and ate proper food and those who did not.

—Better Times.

First Aid to Medical Terms

WATSON DAVIS

THE populace is in a fever of excitement; it is confidently expected that their suppressed anger will soon boil over into armed action."

"The political pot is now beginning to boil as the presidential fever is finding new victims among politicians every day."

Quotations similar to these from a mythical daily paper can be found in almost any installment of breakfast reading matter.

The human body, like the body politic, has its fevers. Physical fevers are more painful to the individual than national fevers. Yet political, social, and economic fevers are usually more dangerous than physiologic ones affecting a single human being. Political remedies seem to be in a prepasteurian state. How encouraging it would be if we could clear up cloudy economic conditions as easily as typhoid fever is prevented by guarding the water we drink! True it is that better health tends to make better government and better economic conditions, but reliable serums for political complications are far fewer than medical specifics.

Quite evidently the people have helped in the making of the medical man's terms. They have called diseases by the symptoms which they recognized or by the class of victims, for example, ring worm and lung fever, jail fever and house maid's knee, pink eye and black leg. And in the case of many diseases, the man of science could not be much more definite in his terms until the fairly recent discovery of the microscope and the knowledge of bacteriology.

When the temperature of the human blood rises above the 98.4 F. of normalcy, or when excitement grips a people, it is said that things have reached a boiling state. Evidently ancient peoples had the same idea, because they expressed it when they called an abnormal temperature of the blood or of the emotions a fever, which in the Latin was *febris* and in the Anglo-Saxon was *fefor,* all from the root word meaning "to boil."

Medically an elevation of body temperature may be designated by another term quite as logical, derived from the Greek instead of the Latin. Pyrexia comes from the Greek for fever. Its root meaning fire, *pyro* or *pyr,* enters as a prefix into many of our ordinary words. Though now pronounced to rhyme with the Anglo-Saxon *fyr,* the Greek root *pyr* is not an ancestor of this early form. The opposite of fever, chill, came into English from the Anglo-Saxon, however, and the short every-day term is not supplemented in medical language.

Of all the fevers, more is known about typhoid, perhaps, than any other. It is prevented primarily by making sure that the identified typhoid bacillus does not pollute our water, milk, and food. Inoculation against infection is successful. Usually, with proper nursing, patients with the disease recover. Less than a hundred years ago, however, this disease was so inadequately known that it was confused with typhus fever, which presents much the same picture in the sickroom, and both diseases were then known by one name, "typhus." In fact, up to the nineteenth century many diseases marked by continued fever and delirium were called by the general name "typhus," which is derived from the Greek for smoky or cloudy. Those who have had a friend or relative stricken with such a disease know that the name is descriptive of the mental state.

An international controversy nearly arose over the two fevers. Paris physicians were studying typhoid and findings ulcers in the intestine; in England the examinations after death did not reveal such ulcers because there typhus had been the fatal disease. In America, where both diseases were present, physicians recognized the fact that two diseases existed and were causing the confusion. It would have been better if the term now used in England, "enteric fever," instead of "typhoid," a corruption of the old name, had been selected as the name of the fever showing enteric, that is, intestinal, lesions. But it will probably remain "typhoid" in America until the death rate becomes zero.

Typhus, louse-borne disease of filth and poverty and the epidemic of the ages, has nearly as many aliases as it has had recrudescences. It has been called jail fever, ship fever, hospital fever, because it flourished where people were unhygienically brought together; in the seventeenth century it was known as the Irish ague in that long-suffering country; the ancients knew it as *morbus pauperum;* and the Spanish still call it "tabardillo" from the spots that appear on the skin.

Many fevers other than typhoid have descriptive names that do not have to be traced to

the Greek in order to be recognized. The vivid rash in scarlet fever serves as a distinctive term for that disease. Relapsing fever recurs for five or six days after a subsidence of about that length of time. Trench fever was first recognized when new conditions of war arose in 1915 and, because it is transmitted by the "cootie," it was a factor in trench life and is not likely to be important in modern civilized life. Rat-bite fever, known principally in China and Japan, begins with the bite of a rat. And there is *febricula,* ephemeral fever—due to many causes—which as you see from its general name covers a multitude of conditions, all, as the alternative name tells, not lasting or serious.

Fleas and Lice

L. O. HOWARD

WHEN I was a small boy at public school in central New York it was not uncommon to see lice in the hair of the boy at the desk in front of me. At that time the labor of that region was mainly Irish, and cleanliness was not practiced by those people and their children; but they were healthy enough, and louse-borne disease was unsuspected.

When I came to Washington at the age of twenty-one, I first became acquainted with fleas, which occasionally in the summer time abounded in certain houses; and on later visits to California and Mexico and southern Europe I encountered fleas as a very serious bodily discomfort, but the idea of disease was not associated with them.

But since those days lice and fleas have been shown to have a vital relation to a number of important diseases, mainly, however, of warmer climates. In these days of personal cleanliness and of clean houses, we in the United States have not much to fear from these insects, and what is said about them in this article is simply a part of the now very long story of insects and human disease.

Fortunately, the insects of which Dr. Howard tells here have rarely been the cause of epidemics in this country, as they have been for centuries on older continents, and were during the World War. Besides information of the flea-borne bubonic plague and louse-borne typhus, this paper contains interesting data on the fleas and lice to be met wherever there are cats and dogs or lack of cleanliness.

Fleas

In beginning to discuss fleas, it may be well to introduce here the idea that the biting insects that transmit disease of human beings are, naturally, those insects which are most intimately associated with man in his habitations. In previous articles I have written about house flies and mosquitoes, and in considering mosquitoes I think that I neglected to point out that the most dangerous disease-bearing mosquitoes are species which practically live with human beings. So it is not surprising to find that fleas carry certain diseases to human beings, since they are fond of human blood and a number of species in different parts of the world are found commonly in and about houses.

It is very interesting now to read the accounts of some of the great plague epidemics, and even some of the great stories in books which have been built up around plague epidemics, like Manzoni's *"I Promessi Sposi,"* DeFoe's "History of the Great Plague in London," or more recently Stanley Weyman's "A Gentleman of France," and to see how beautifully the recently discovered but then unsuspected carriage of the plague by fleas fits into all of the events as they are told. It is another instance of "When we know it, it is easy," and one has the same feeling nowadays when reading such a book, for example, as "La Roche on Yellow Fever."

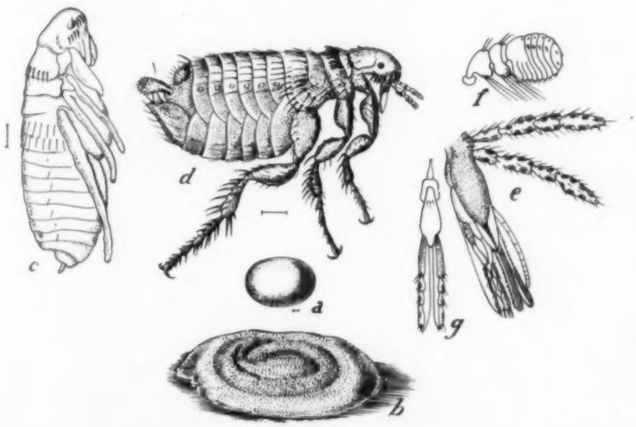
We need not recite here any of the facts concerning the death of twenty-five million people in Europe in the fourteenth century from the plague, or the average annual mortality of one million in India, but may simply state that the bubonic plague is the principal disease carried by fleas. It is carried mainly, not by the true human flea, but by one or more of the rat fleas. So that now when an outbreak of the plague threatens, as it did a dozen years ago in San Francisco, the health people begin immediately the destruction of rats. In the case just cited the United States Public Health Service started a rat campaign under the direction of Dr. Rupert Blue, afterwards chief of the Service, and destroyed over a million rats in a short time. Then it was found that the ground squirrels in several counties in California had been

infected with the plague, by means of fleas probably first coming from rats, and there is even today a vigorous campaign in certain counties in California for the destruction of the ground squirrel, with the disease prevention end first in mind.

There are other diseases that are carried by fleas, but they sink into comparative insignificance as compared with the plague and most of them are diseases of other vertebrates than man.

There are more than five hundred species of fleas in the world, and some of them are rather general feeders, attacking several species of vertebrates, while others are rather specific in their attention to a single species. One form is known as "the human flea," *Pulex irritans* Linnaeus. It is a form, probably originally European or Asiatic, which has spread over many parts of the world, and, while apparently never very abundant in the northeastern United States, is found abundantly in the southwestern states, from Texas to California. In spite of its popular name, it is not confined to human beings, but it seems in Europe to develop normally on the hedgehog and is occasionally found on dogs and cats. In our southern states, Bishopp has found it to be a common parasite of hogs—so much so, in fact, that he thinks that down in Texas it might more properly be called the hog flea than the human flea.

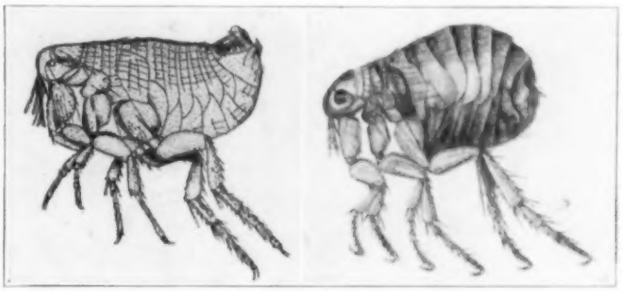
The flea which is perhaps most commonly met with in houses in the United States is the common cat and dog flea, *Pulex canis,* and



The cat and dog flea. a, egg; b, cocoon; c, pupa; d, adult; e, mouth parts; f, labium; g, atenna.

we may briefly describe the life history of this species since it is very similar in most respects to most of the other fleas.

The eggs are laid on the hair of the cat or dog, and, if this animal happens to be a household pet, the eggs are dropped off on the floor, and, under the right conditions of temperature and moisture, hatch, and the elongated, thin, white, worm-like, legless and eyeless larva, or maggot, comes out. It feeds upon organic matter in the floor cracks, and especially upon the partly digested blood excreted by the adult fleas; eventually it becomes full-grown, spins a light-colored cocoon, and in it transforms to a pupa from which the adult flea emerges. The length of the life in the maggot stage depends upon temperature, humidity, and abundance of food. It may be as short as a week or ten days.



To the left, the Indian rat flea, Xenopsylla cheopis, male. To the right, the flea which infests man, Pulex irritans. *(After Jordon and Rothschild.)*

Very often in Washington well-to-do families will return in the autumn to their houses which have been closed during the summer, and will find them overrun with fleas. This means that before they left for the mountains, or the seashore, or for Europe, there had been one or more pet dogs or cats in the house, and that the fleas' eggs and larvae coming from these animals, in the absence of daily house airing and daily sweepings, developed rapidly, especially if the summer was rainy, and went through perhaps two generations while the family was away. A female flea may deposit as many as four hundred and fifty eggs; so the abundance of fleas in the autumn is explained.

Speaking of all fleas, it may be said in general that they are more abundant during moderately warm weather when it is moist. When it is very hot and dry they cannot thrive, and in the colder parts of the country they are never seen except in the summer. In the southern states they are active through the year, but in the winter time they are seldom noticed and confine their attacks for the most part to the smaller animals. In general it may be said that fleas are most numerous in the south in houses in the late spring; and in the northern United States during the latter part of the summer and the early fall. It has been noticed also that on sandy land there are more fleas than on heavy soils.

When we consider the remedies against fleas, the first thing to be thought of is the doing away with domestic animal pets or keeping them away from houses. Provide a definite sleeping place for dogs and cats; have their beds cleaned regularly by spraying with

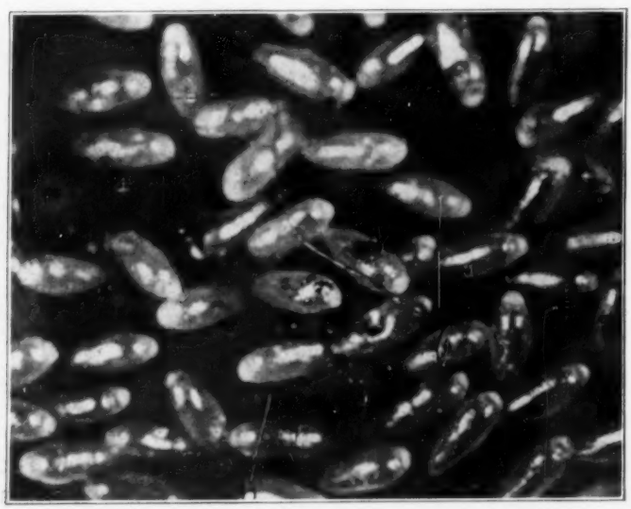
coal-tar disinfectant. A 3 per cent. compound solution of cresol may be used in washing pet animals. A kerosene soap emulsion diluted may also be used for this purpose. For infested houses, sulphur candles may be burned at the rate of four pounds to the thousand cubic feet of space. Where they are breeding out of doors around the house, soaking the ground with water helps. Where the soil is sandy it should be sprinkled heavily with salt, and wet down by sprinkling. Where fleas are abundant in sheds, barns, and hog yards, spraying with creosote oil is said by Bishopp to be effective.

In houses where the fleas are breeding in cracks of the floors, thorough sweeping and washing with strong soapsuds, or, in severe cases, spraying with gasoline or kerosene emulsion should be tried.

The traveler in southern Europe or Central America, or any other notoriously flea-infested country, should carry with him flake naphthalene or pyrethrum, and should dust it into his bed clothing.

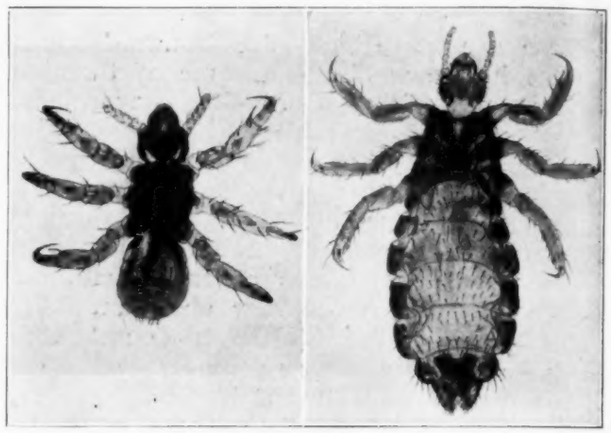
I have tried a great many flea remedies, and have found most of them ineffective. A popular idea some years ago was that a piece of meat placed in the center of a sheet of sticky fly-paper laid on the floor would attract the fleas to their destruction. Experiments in my experience failed.

Many people are extremely susceptible to flea poison; extreme irritation and itching follow the bite; sometimes ulcers develop. The danger of infection after scratching is great. Disinfectant solutions and cooling applications, such as mentholized or camphorated ointments, are suggested, and I have found that moist toilet soap smeared over the punctures soon relieves the irritation.



Eggs of Pedunculus humanus, the louse whose normal habitat is man. These eggs are greatly magnified.

A word should be said about the discovery that fleas were concerned in bubonic plague. It was not until the causative organism, *Bacillus pestis,* was isolated almost simultaneously by Kitasato, the Japanese, and Yersin, the Frenchman, in 1904, that the true proof could be brought out in a satisfactory way, although an apparent transmission by means of fleas was suggested as early as 1898 by Simond. The British Plague Commission in India in 1906 proved most conclusively that



To the left, the larva of Pediculus humanus just after it has emerged from the egg, before feeding. To the right, the adult female of Pediculus humanus.

the rat flea is the principal means of transmission of the bubonic form of the plague. No less than eight species of fleas have been shown by various workers to be carriers of the plague bacillus, but the rat flea, known as *Xenopsylla cheopsis,* is the principal carrier in great epidemics. The original idea of the Indian Plague Commission was that the bacilli are present in the excreta of the flea and are inoculated into the human host by scratching. Later experiments by Bacot and Martin, however, show that the plague can be transmitted by the bite of fleas when a temporary obstruction of the fore-stomach of the insect causes the blood filled with bacilli to be regurgitated into the bite puncture.

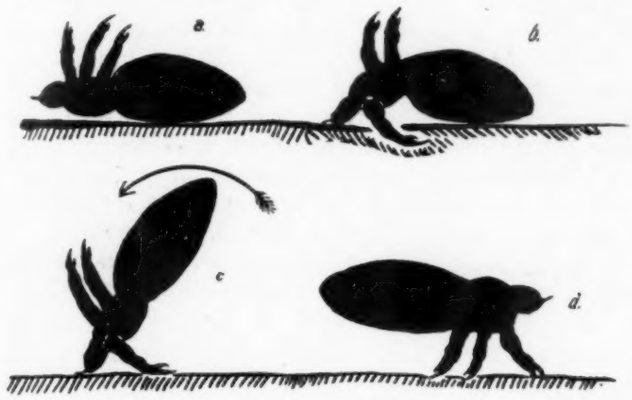
Lice

And now we come to the lice; and here again we find that a great scourge to humanity becomes epidemic through the agency of an insignificant insect which, like the others mentioned, is a species closely associated with man.

Until quite recently it was considered that the head louse and the body louse were two distinct species, and they were known as *Pediculus capitis* and *P. humanus* or *P. vestimenti;* but recent investigations indicate that they are the same species and that both forms should be known under the name *P. humanus.* This insect carries a number of diseases, but the most important ones are typhus fever, with its closely related "trench fever" of the late war, and a milder form known as "Brill's

disease." And then too they carry several important so-called relapsing fevers.

Typhus fever is an old and famous disease known for many centuries in all countries in Europe. It is acutely infectious and highly contagious, and has a high mortality. It has frequently in past years appeared in epidemic form, and it has been termed in England "jail fever" and "hospital fever." It has been



The louse, finding itself, by accident, on its back, turns a somersault. (After Haase.)

observed in many parts of the world, and usually in temperate or cold climates. In spite of the fact that the clothing of patients was early recognized as a source of infection (this was pointed out a hundred years ago), it is only of comparatively recent years that it was definitely proved to be carried by lice. The Frenchman, Nicolle, working in Algeria in 1909, and the Americans, Ricketts and Wilder, working in Mexico in 1910, brought forward the conclusive proof. Ricketts died of typhus as the result of his work in Mexico.

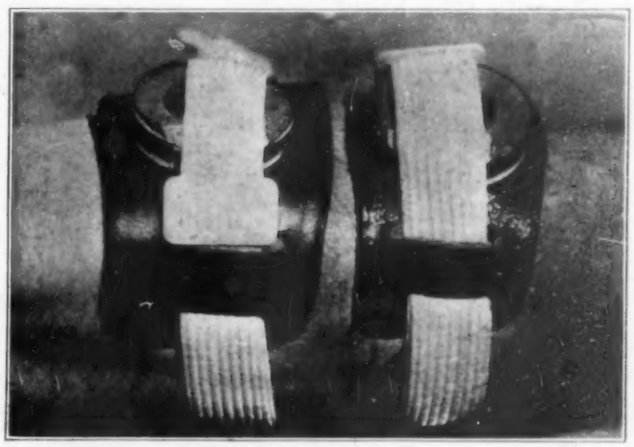
It was extremely fortunate that this discovery was made before the outbreak of the World War, although it is safe to say that it would have been discovered in the early years of the war, on account of the great attention which was necessarily devoted to the fever beginning with the outbreak of an epidemic in Serbia in January, 1915, which had its origin in some Austrian prisoners who were allowed to disperse over the country. The physicians in Serbia were few in number, and many of them were soon attacked by the disease. There was great ignorance among the population, and practically no hospitals. By April, people were dying at the rate of nine thousand a day, and before the epidemic was checked one hundred and fifty thousand people had lost their lives. The cessation of the epidemic was due almost entirely to the heroic labors of the American Red Cross physicians headed by Dr. Strong of Harvard. This was followed in 1916 by an epidemic in Syria, and later in Austria, Bulgaria, and Russia. Typhus itself was largely absent from the British, French, and German armies.

In the course of the war, it was discovered that trench fever was a mild form of typhus and was carried by the body-louse. Careful studies of this insect were begun by the experts of the different nations, notably by Nuttall in England and by Haase in Germany. It was important to know absolutely everything about this species of louse; and in addition all sorts of remedial measures, including especially disinfection of clothing, were tried.

It is interesting to note that the Germans published as early as 1915 a large, illustrated, ninety-page pamphlet on the biology of the body-louse. Haase, the writer, found his material for study in a camp of Russian prisoners, and made very elaborate investigations. It is indicative of the thoroughness of the German scientist that he printed a series of photographs illustrating how the louse, when it accidentally finds itself on its back, succeeds in turning over to its normal position. The practical aspect of this part of his studies does not appear.

When the trench fever became serious the British surgeons, and later the American surgeons, concentrated on the subject, and an English entomologist, Peacock, was brought from England to assist in the work. Thereafter the delousing of troops in the most economical way that could be found was a very important feature of army operations.

The writer was at the time chairman of the sub-committee on medical entomology of the National Research Council, and started careful work on the louse, which was first



The lice were confined to the arm in these cages, which had watch glasses to allow observation, and kept there for study during six months.

carried on by R. H. Hutchison in collaboration with the Medical Department of Tulane University in New Orleans, since it was found to be easy to get a plentiful supply of lice from the jails and charity hospitals in that city.

An interesting incident of this investigation was the volunteering of Mr. James Touhy, an

old professional wrestler, for the louse experimental work. He had two sons in the war, but was himself too old for active service at the front, and wanted to do his bit. This was the only means that presented itself. So, by means of a specially constructed apparatus, he loaned his left arm as a feeding place for lice continuously for six months.

Naturally, it was found that the whole problem rested upon the most economical and at the same time thorough method of cleansing troops and their wearing apparel. Dr. Strong's work in Serbia was done along this line, and with the cleansing came the control of the epidemic. It was necessary to arrange so that a daily or weekly bath could be taken; that the underclothing should be frequently changed and laundered, and that the outer clothing should be frequently dry cleaned; moreover, that there should be a weekly inspection of the troops and that this should be very thorough. Of course, the difficulties of this under war conditions were enormous, but it is unnecessary in this article to show the methods by which this was accomplished, or partially accomplished. Naturally it could not be done with absolute thoroughness, and as a result it became necessary, when our troops began to return from France, to erect structures at the port of New York in which they were thoroughly deloused before being discharged.

The great war being fortunately concluded, all of the large-scale delousing methods which were perfected may not have to be brought into play for many years. So they need not be described here.

However, sanitarians, immigration officials, and social workers among the very poor and uncleanly people should know some of the things that were discovered; and in general we may say that where lice occur in the head, especially of children, the hair should be kept very short and the head should be frequently brushed and washed. To get rid of lice and their eggs instantly the head should be washed with equal parts of kerosene and vinegar. The vinegar separates the eggs from the hair, and the kerosene kills them. It is also recommended to anoint the head with a mixture of equal parts of kerosene and olive oil, and then wrap the head with a towel and sleep in it. It is interesting incidentally to suggest that the former use of hair oils and pomades probably originated from the prevalence of head-lice.

Going back to typhus once more, the causative organism of the disease appears to be still unknown. Several different micro-organisms have been found both in typhus patients and in lice, but that any one of these micro-organisms is the cause of the disease is still disputed. That the disease is transmitted by the bites of lice is now thoroughly accepted, but, with the micro-organism still in doubt, the question of its partial development in the bodies of the lice is also still in doubt. Several workers have claimed that the disease is transmitted hereditarily by lice, while this has been disputed by other equally competent authorities. That the absolute destruction or prevention of lice will ward off typhus is, however, beyond doubt. This knowledge makes possible efficient measures for prevention.

INSIDES AS WELL AS OUTSIDES

Perhaps some of us are old enough to have forgotten or young enough to have never heard of that little girl who came to school one day with a note to her teacher asking, "Please do not tell Grace about her insides; it ain't polite." But a generation of Graces have been led through the arid stretches of grammar school physiology, and if the emphasis now is swinging away from insides to outsides—to teaching Grace how tall and how heavy she should be and why she should drink milk and play outdoors and sleep ten hours with the windows open—it is not for reasons of etiquette but pedagogy. Last year the Child Health Organization called a conference at Lake Mohonk on health education and the training of the teacher; its printed report is used as a text book in universities, colleges and normal schools throughout the country. This July will see at San Francisco the first international conference on child health education, sponsored by committees of the National Education Association, the American Medical Association, the American School Hygiene Association, and the American Child Health Association. In the whole effort to change the connotation of "health" from a mere negative absence of disease to a positive enjoyment in the use of mind and body, nothing is more significant than this rapidly growing movement to teach children the few simple maxims of health and train them in the everyday habits which represent the summation of experience and research in its achievement.

—THE SURVEY.

"PATENT MEDICINES"

IV. Secrecy and Mystery—the Essentials

ARTHUR J. CRAMP

MYSTERY is as necessary to the "patent medicine" maker as it is to the professional magician. If the history of nostrums proves anything, it proves that we are most interested in remedies when there is something mysterious about them. The modern proprietary home remedy is mysterious because its composition is essentially secret. Secrecy of composition is to the "patent medicine" maker what the silk handkerchief and the wand are to the vaudeville thaumaturgist. Take away the element of secrecy from the "patent medicine" business and this gigantic monument to human credulity will crumble and decay. The nostrum maker realizes this. It explains why every effort on the part of the public to require the manufacturers of "patent medicines" to tell what is in their concoctions is fought fiercely and bitterly, and legislation looking toward such public enlightenment invariably goes down to defeat.

If you were suffering from "erysipelas, salt rheum, eczema, pimples, or liver spots," would you take a little sugar at night and go to sleep peacefully in the happy belief that the morning would find you free from blemish and from pain? Hardly. Yet that is just what you would have been doing some years ago if you had bought a certain preparation, worth a few cents, for fifty cents. And why could you be so fooled? Because the makers of "patent medicines" are not required by law to publish the contents and proportions of the contents of their products. When they are, most of them will lose all their business.

Munyon, he of the pompadour and uplifted finger, for years sold, among other nostrums, one called "Munyon's Blood Cure." The claims made for the product were:

> Will positively cure all forms of Scrofula, Erysipelas, Salt Rheum, Eczema, Pimples, Syphilitic Affections, Mercurial Taints, Blotches, Liver Spots, Tetter and all skin diseases.

This is what was claimed for the product and, presumably, this is what the public believed. Would the public have believed it, however, if the composition of "Munyon's Blood Cure" had been declared on the label? When this marvelous cure-all was examined by the federal chemists, they reported that the product was found to consist of nothing more marvelous than sugar!

Epsom Salt Under a Fancy Name

"Spurmax" was one of a line of "patent medicines" put out by a Chicago concern. It was advertised by the "prescription fake" method, that is, in what seemed to be a department of the newspaper devoted to questions and answers, under the general heading "Health and Beauty Advice." The "answers" gave formulas for medicinal and cosmetic preparations. Each formula contained a "joker" in the form of a "patent medicine." Spurmax was one of these. According to a fictitious "answer," Spurmax, combined with a little glycerin and water, would make "a fine liquid powder that softens and whitens the skin." On going to the drug store for the ingredients, the purchaser found that Spurmax came in a fancy box for which fifty cents was charged. Analysis in the American Medical Association Chemical Laboratory proved that it was nothing more mysterious than one cent's worth of Epsom salt. Would the manufacturers have been able to get half-a-dollar for this had the law required them to publish the ingredients on the package?

Then there was "Dr. T. Felix Gouraud's Oriental Cream or Magical Beautifier" sold under such claims as:

> Purifies as well as Beautifies the Skin.
> Removes Tan, Pimples, Freckles, Moth-Patches, Rash and Skin Diseases and every blemish on beauty and defies detection.

This preparation was analyzed at different times, and as long ago as 1907 the state chemists of New Hampshire reported that this "Magical Beautifier" consisted of "approximately one-half ounce of calomel suspended in a short half-pint of water." The state chemists of Connecticut, in reporting on the same product some time later, declared that while a bottle of "Gouraud's Oriental Cream" cost ninety-eight cents, the amount of calomel in it could be "bought at retail for about 6 cents; the remaining ninety-two cents is the charge

for a half pint of water." How long would a product of this sort be a commercial success if the manufacturer were required to tell the public what is in his preparation?

"Mother's Friend" has long been advertised as a product that will make childbirth easier. In the days when lying on the label was only a moral offense and carried no legal penalties, this preparation was sold under such claims as:

Shortens the duration of labor.
Will assist in the safe and quick delivery.
For relief of the suffering incident to child-birth.

The expectant mother, dreading the coming ordeal and willing to grasp at any help offered, might purchase this preparation believing that it possessed some magical properties due to a skilful combination of probably rare and little-known substances. Yet, when "Mother's Friend" was subjected to cold and critical tests by government chemists, they reported that it consisted essentially of oil and a small quantity of soap! How long would this business last if the manufacturers had to publish on the label the facts regarding the composition of their product?

To those who have been frightened by nostrum advertisements into the belief that they have gallstones, there have been a number of preparations sold for the alleged relief of this condition. "Fruitola" was one of these. The preparation has also been recommended for appendicitis and chronic constipation. When examined in the American Medical Association Chemical Laboratory, this gall-

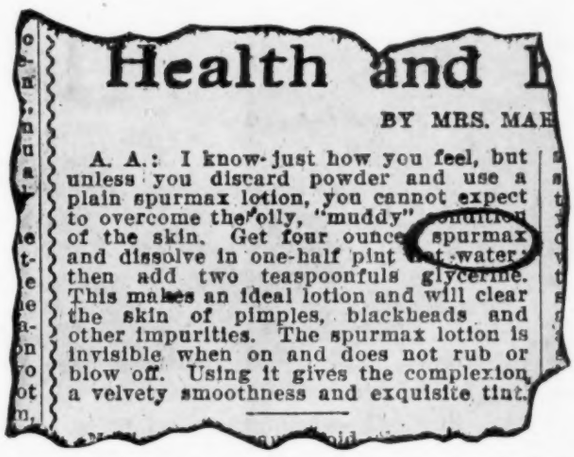
A Skin of Beauty Is a Joy Forever
Dr. T. FELIX GOURAUD'S
ORIENTAL CREAM
Or Magical Beautifier
Purifies as well as Beautifies the Skin. No other cosmetic will do it.
Removes Tan, Pimples, Freckles, Moth-Patches, Rash and Skin Diseases, and every blemish on beauty, and defies detection. It has stood the test of sixty-four years — no other has — and is so harmless we taste it to be sure it is properly made.
Accept no counterfeit of similar name. The distinguished Dr. L. A. Sayre said to a lady of the haut-ton (a patient): "As you ladies will use them, I recommend Gouraud's Cream as the least harmful of all the Skin preparations."
For sale by all Druggists and Fancy Goods Dealers

The state chemists of Connecticut who analyzed "Gouraud's Oriental Cream" reported that this "Magical Beautifier" consisted of about six cents' worth of calomel in half a pint of water. They stated that the preparation sold for ninety-eight cents a bottle. Here is one of the old advertisements of this preparation.

stone and stomach trouble remedy was found to consist essentially of a bottle of olive oil (flavored) and some Seidlitz powders. Is it conceivable that this business would continue to thrive if the mystery surrounding "Fruitola" were removed by the publication of the formula?

An Obesity Cure

Nor can those who would be svelte escape the same kind of deception. "Nikola," sold as a product that would "Reduce Your Weight and Improve Your Health," was a powder to


Health and H

BY MRS. MAR

A. A.: I know just how you feel, but unless you discard powder and use a plain spurmax lotion, you cannot expect to overcome the oily, "muddy" condition of the skin. Get four ounces spurmax and dissolve in one-half pint hot water, then add two teaspoonfuls glycerine. This makes an ideal lotion and will clear the skin of pimples, blackheads and other impurities. The spurmax lotion is invisible when on and does not rub or blow off. Using it gives the complexion a velvety smoothness and exquisite tint.

"Spurmax" was long advertised by the "prescription fake" method, that is, fictitious answers to hypothetical questions were published in the newspapers in the form of a "Health and Beauty" column. Each answer contained a "joker" in the form of a "patent medicine." Here is one of the "answers" recommending "Spurmax." The purchaser was charged fifty cents for four ounces of Spurmax. It consisted of one cent's worth of Epsom salt. No wonder "patent medicine" makers object to publishing the formula on the label.

be put in the bath. The price of a "Full Treatment," was $3.00. The directions read:

Dissolve one package of Nikola each day in a full hot bath. Remain in it 15 minutes or more, dry thoroughly and watch results. The hot bath will open the pores and the action of Nikola is to draw the fatic [*sic!*] and uric acids out through them. You can see the fat float.

What was this wonderful product that would "draw the fatic [*sic!*] and uric acids" from the obese? A modern miracle, surely. One might imagine so, at least from the claims, and there was nothing on the package to destroy the illusion. The question was put up to the chemists of the American Medical Association. Their reply was that "Nikola" was essentially dried washing soda with a trace of common salt. But for the veil of secrecy which our present inadequate laws permit "patent medicine" fakers to throw over their products, is it conceivable that even the most optimistic seeker of a short cut from obesity to slimness would have paid $3.00 for a few cents' worth of washing soda and salt?

Limited Formula Disclosure

And so it goes. These are but a few of scores of products made up of simple well known substances, disguised with fancy names,

sold under ridiculous claims and at exorbitant prices, simply because the public has no means of knowing what it is getting when it goes into the market to purchase proprietary home remedies. But if this secrecy permits the "patent medicine" maker to sell harmless substances at fancy prices and under false claims, it also permits him to palm off on the public deadly drugs with no warning as to their presence.

It is true that when Congress enacted the Food and Drugs Act ("Pure Food and Drug Law") it attempted to lessen this danger by requiring the manufacturer of "patent medicines" to declare both the presence and the amount of a few widely used drugs, most of them of habit forming tendencies, then employed in the manufacture of nostrums. Today the "patent medicine" maker has to declare on his label both the presence and the amount of any alcohol, morphine, opium, cocaine, heroin, eucaine, chloroform, cannabis indica, chloral hydrate, and acetanilid (or derivatives of these drugs) that may be in his preparation. But that is all. He may put in strychnine or arsenic or carbolic acid or prussic acid or aconite or a score of other dangerous poisons and no one is the wiser until perhaps a case of poisoning brings the matter to the public's attention. How many epileptics who have used any of the widely advertised "epilepsy cures" have been made victims of chronic bromism and brutalized by the unwitting dosing with bromides which they had no means of knowing is the active drug that most of these nostrums contain? How many children have been poisoned from the presence of santonin in worm syrups? How many women have been disfigured by the use of hair dyes containing paraphenylendiamine, or have been poisoned by the use of hair dyes containing lead salts? These questions can never be answered because it is only the rare and occasional case that, through the courts, comes to the public's attention.

Another Reason for Secrecy

But there is yet another feature of the secrecy surrounding the composition of "patent medicines" that is of vital importance to the public health. Usually "patent medicine" makers do not discuss this point freely, but one of their spokesmen did a few years ago. It was at the time New York City had passed a law requiring "patent medicine" makers either to publish the names of the active ingredients on the label or deposit the names of these ingredients with the Department of Health. A drug journal, long known to represent the "patent medicine" interests, sent out a letter to druggists urging them to refuse to obey the law. In the course of this letter a statement was made which throws an interesting side-light on the "patent medicine" business. The letter said, among other things:

> It is practically impossible to prove that the therapeutic claims, made for a preparation whose composition is not known, are "false and fraudulent" . . . once, however, they are given the formulas, they can get as many doctors as is necessary to testify that the preparations made according thereto are not good for the diseases for which they are recommended. . . .

Put in other words this might have read: We know that the claims made for most "patent medicines" are false and fraudulent, but so long as we keep the composition secret, it will be difficult for the courts to convict us! An interesting admission, surely. The letter, which the publishers of this drug journal sent out, closed with the statement that if the manufacturers did declare the composition of their products,

Some "patent medicines" make a pretense of publishing a formula. "Paine's Celery Compound" was one of these. However, they give no quantities and, therefore, their "formula" is meaningless. The only real information that the label of Paine's Celery Compound carried was the statement, required by law, that it contained more than 19 per cent. of alcohol.

"Fruitola," which was "recommended for gallstones," on analysis was found to consist essentially of olive oil and some Seidlitz powders. If the manufacturer had to publish the formula on the label, how long would the public continue to buy Fruitola at one dollar a package?

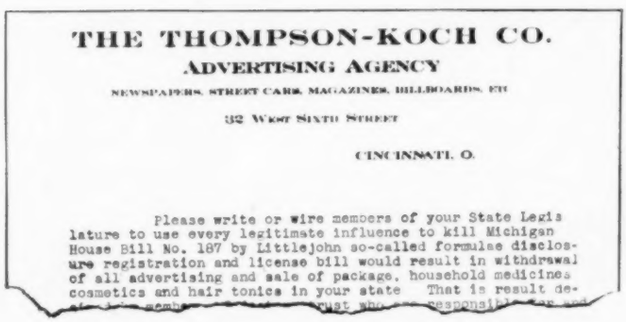
. . . they will be supplying evidence which may result in their own undoing.

Taking this attitude, is it any wonder that "patent medicine" makers, as a class, fight every effort that is made to protect the public by requiring a "patent medicine" to have the names and quantities of the active ingredients printed on the label?

What Decent Pharmacists Think of It

But there are high-grade drug journals which look upon pharmacy as a profession, and which hold the public's interest foremost. One of such is the *Druggists' Circular*. This magazine has spoken in no uncertain tones regarding the fraud that has been practiced by the "patent medicine" fraternity. In pointing out the evils of the secret formula and discussing one of the reasons for the attitude of nostrum makers on this point, this journal said at the time the Food and Drugs Act was passed:

. . . the manufacturer . . . putting up preparations according to a secret formula . . .



THE THOMPSON-KOCH CO.

ADVERTISING AGENCY

NEWSPAPERS, STREET CARS, MAGAZINES, BILLBOARDS, ETC

32 West Sixth Street

CINCINNATI, O.

Please write or wire members of your State Legislature to use every legitimate influence to kill Michigan House Bill No. 167 by Littlejohn so-called formulae disclosure registration and license bill would result in withdrawal of all advertising and sale of package, household medicines cosmetics and hair tonics in your state That is result de-

When the public, through its elected representatives, attempts to get laws enacted that will require "patent medicine" makers to remove the element of secrecy from their wares, certain advertising agencies that handle "patent medicine" accounts immediately circularize newspapers and retail druggists urging them to use their influence in defeating the proposed legislation. Here is reproduced part of a letter sent out by an Ohio advertising agency a few years ago to Michigan druggists.

can put in or leave out any ingredient he chooses, as the condition of the market, his respect for the law, or other circumstance may dictate. Indeed, he may take an entirely different thing and continue to sell it under the old name and to boost it with testimonials written for the old preparation. This is done right along.

Whenever there is a bill either in the state legislatures or before Congress looking toward the protection of the public health by requiring those who would sell home remedies under a trade-marked name to give information regarding their composition, the makers of such products have certain stock arguments. The first argument is that the formula is their property and that to publish it on the label would amount to confiscation of such property. They argue, further, that publishing the formula would be of no benefit to the consumer and finally declare, that anyway, the formula is no one's business except theirs. They never admit, of course, as was inadvertently admitted by one of their spokesmen, that publication of the formula would make it much more difficult for them to lie about their products and would diminish the chances of the public's believing, for instance, that a pinch of washing soda and salt in a bathful of water could cure obesity.

Any "Patent Medicine" Can Be Duplicated

The argument that the publication of formulas would amount to confiscation is utterly without foundation. There is not a "patent medicine" on the market today that cannot be analyzed with sufficient accuracy so that any manufacturer who wanted to could duplicate it. More important yet, there is not a "patent medicine" on the market today whose therapeutic value cannot be equaled or exceeded by nonsecret, official preparations to be found in the National Formulary or the United States Pharmacopeia.

The fallacy of the claim of the "patent medicine" manufacturers who fear competition if they are made to disclose their formulas was well shown by a New York druggist of high ideals at the time that one of the big "patent medicine" concerns was fighting the formula disclosure ordinances of New York City. A "patent medicine" manufacturer had sent out a letter urging New York druggists to refuse to obey the law and offering to give them legal protection should they follow the suggestion. The druggist in question, after thanking the "patent medicine" concern for its offer and stating "we shall not have to avail ourselves of your kind offer to protect us in breaking the law," pointed out that no manufacturer producing an honest product should have any objection to obeying a law that was obviously in the interest of the public health. The druggist pointed out further that the fact that the "patent medicine" manufacturers opposed giving any information regarding the composition of their products is "strong presumptive evidence that the claims you make for these preparations are false." He then declared in no uncertain terms what every one familiar with the subject knows to be a fact:

That you are afraid of revealing the nature of your preparations to your competitors is absurd. There is no preparation on your list that cannot be matched or bettered by one in the National Formulary or the United States Pharmacopeia. The sale of your preparations, and of others like them, depends on advertising and not on therapeutic value.

Recently there has been some talk of getting national legislation bearing on the publication of formulas of preparations sold for self treatment. Apparently, the "patent medicine" makers themselves are beginning to realize that continued opposition to a law that is

in the interest of the public will do them little good, for a publication which is looked upon as a mouthpiece of the "patent medicine" industry made this significant statement a few months ago:

> It should be remembered that while a developed formula has a great value, *it is the trade name, the advertising, the merchandising skill applied in connection with it that creates its valuable good will.* [Italics mine.—A. J. C.] Ten to one a thorough search through books of formulae will reveal that your own is already known to the medical world. But no one can get the same benefit from it that you have gained unless they spend in merchandising it the same money you have spent.

Elsewhere in the same article it was admitted that "the ingredients of some of the biggest selling proprietary medicines are duplicated in one way or another by imitators. Usually without profit." This, of course, is just what the medical profession has always maintained.

Advertising and Name Monopoly the Elements of Success

So far as the commercial success of the product is concerned, one of the least important things about a "patent medicine" is what's in it. For commercial success, the really important things are the amount of money that can be spent in advertising it and the perpetual monopoly of the name by the means of a trademark. Given a large advertising appropriation

NOTICE

THE PERUNA DRUG MANUFACTURING CO.,
COLUMBUS, OHIO, U.S.A.

1/11/05

Gentlemen:

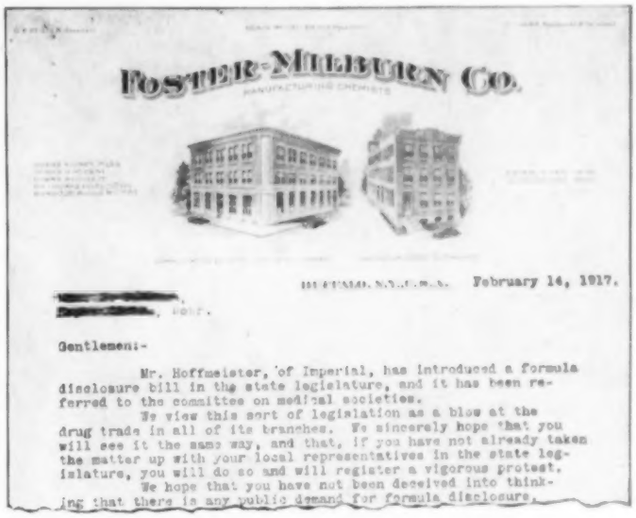
In the Kentucky legislature in January 9th, Representative Johnson, of Franklin County, introduced House Bill No. 53 relative to proprietary medicine.

Section 1 is as follows:--That all proprietary medicines sold or placed on the market to be sold within the commonwealth of Kentucky, by wholesale or retail, shall have printed on each package sold or to be sold as aforesaid, the formula of said medicine. Said formula shall be printed in English with type sufficiently large to enable it to be read as easily as the ordinary newspaper.

The enemies of proprietary medicines have found no measure so serviceable for inflicting a telling blow than to attempt the passage of a formulary bill.

As long ago as 1905, Hartman, who made "Peruna," was doing his best to defeat any legislation that might require him to publish the formula on the label. It is worth recalling that at the time the letter reproduced above was being sent out, Peruna was merely a slightly disguised booze that was going into "dry" territory in carload lots. Later, the government notified Hartman that he would have to put some real drugs in his booze or take out a liquor license. He put in a laxative and the sales fell off.

and a fancy, trade-marked name, and it would be possible to build up a huge business in the sale of pink dish water. In fact, there is a story in drug circles of a man, familiar with the "patent medicine" business, who wagered that he could put on the market a product having no remedial value and by advertising could build up a not inconsiderable sale for the product. The story runs that within a year he had won his bet and had as an asset not only a handsome profit, but a large collection of testimonials certifying that the users had been cured of various ailments. His remedy consisted of nothing but sugar.


FOSTER-MILBURN CO.

BUFFALO, N.Y., U.S.A. February 14, 1917.

[redacted]

Gentlemen:-

Mr. Hoffmeister, of Imperial, has introduced a formula disclosure bill in the state legislature, and it has been referred to the committee on medical societies.

We view this sort of legislation as a blow at the drug trade in all of its branches. We sincerely hope that you will see it the same way, and that, if you have not already taken the matter up with your local representatives in the state legislature, you will do so and will register a vigorous protest.

We hope that you have not been deceived into thinking that there is any public demand for formula disclosure.

In 1917, Nebraska attempted to get a law on the statute books requiring "patent medicine" makers to give some information regarding their product. Immediately the nostrum interests got busy. Here is reproduced part of a letter sent out by the makers of "Doan's Kidney Pills" to Nebraska druggists.

The argument of the "patent medicine" maker that publishing the formula would not benefit the consumer is equally without foundation. As has already been pointed out, it would certainly be to the consumer's advantage if he could know that the product which he was about to buy as a "blood cure" was nothing but sugar; that the preparation the expectant mother invested in to "make childbirth easier" was nothing but a little oil and soap; that the "cure" for gallstones was nothing more marvelous than olive oil and Seidlitz powders. All this information would benefit the consumer, although, admittedly it might not benefit the manufacturer. But if truthful statements of fundamental facts may hurt the sale of a product, the sale of that product ought to be hurt. The theory that the public is so ignorant that it would be no protection to publish the composition is yet another fallacy. The public is not so ignorant as the "patent medicine" makers would have us believe. Moreover, the public knows where it can get information on subjects that may be outside its immediate field of knowledge.

John Doe, thinking that he is suffering from some passing indisposition, purchases a "patent

medicine" and takes it for a while. He gets no better but, indeed, gets worse, and finally goes to his family physician. He tells his physician that he has been taking a certain preparation. The physician, not knowing the composition of the preparation that has been taken, is handicapped in his diagnosis of the case because he cannot know whether the symptoms he finds are partly due to drug action or are altogether the result of the condition from which John Doe is suffering.

The Supreme Court on Secrecy

The final argument that the composition of a "patent medicine" is no one's business except the manufacturer's is a mid-Victorian concept. It might have been listened to when the *laissez-faire* doctrine and Manchesterism were rampant, but it no longer commands respect. That same argument used to be held by the manufacturers of foods. Only a few years ago (in 1919) the Supreme Court of the United States handed down a decision of far-reaching importance on this subject. A concern that put out a mixture of glucose (85 per cent.), molasses (10 per cent.), and sorghum (5 per cent.) did not declare the proportions of these various ingredients. It was notified by the state authorities of Kansas, which has a law on the subject, that unless the percentages of the different ingredients were shown, there would be arrests and prosecutions. The glucose concern brought action against the Kansas officials, declaring that the requirements were unconstitutional and also in conflict with the federal law. They won in the lower courts, but the Kansas Supreme Court reversed the findings of the lower courts. Then the glucose company carried the matter to the Supreme Court of the United States—and again lost. The Supreme Court declared in this connection:

> . . . it is too plain for argument that a manufacturer or vendor has no constitutional right to sell goods without giving to the purchaser fair information of what it is that is being sold. The right of a manufacturer to maintain secrecy as to his compounds and processes must be held subject to the right of the state, in the exercise of its police power and in promotion of fair dealing, to require that the nature of the product be fairly set forth.

Evidently, therefore, there is nothing sacrosanct about formulas—at least of proprietary foods—although some manufacturers would have us believe that there is. It is to be hoped that as public opinion crystallizes, the Supreme Court of the United States may have an opportunity of declaring itself in terms equally unequivocal with regard to what constitutes "fair information" to the man who buys a medicine to pour down his throat.

Some makers of "patent medicines," in an effort to appear frank and aboveboard in their business, publish what they call a formula consisting merely of the names of the ingredients that are supposed to make up the preparation. Such alleged formulas are worthless, because it is the amount of the individual drugs that determines the action of the compound. The published list of the names of the ingredients without the quantities is but a piece of cheap advertising claptrap. It is an attempt to lead the purchaser to believe that the manufacturers are taking him into their confidence.

Summed up, the case against secrecy is simple and elemental, *viz.*, the right of the prescriber to know what he prescribes. What would a patient think if his physician prescribed a remedy of whose composition he, the physician, were ignorant? If the physician is going to prescribe intelligently, he must know what he is giving. By the same token, if the patient is going to prescribe intelligently for himself, he must know what he is taking.

BEWARE OF IMITATIONS
"NIKOLA"
REGISTERED
BEWARE OF IMITATIONS
Bathing Compound Will Reduce Your Weight and Improve Your Health
"NIKOLA"
Full Treatment 21 BATHS $3.00
These Druggists and Shops Will Supply You
Or NIKOLA CHEMICAL CO. Inc., 449 WEST 52D STREET, NEW YORK

"Nikola" was advertised as a "bathing compound" which would "Reduce Your Weight and Improve Your Health." Three dollars was charged for one "Full Treatment." The chemists of the American Medical Association reported that "Nikola" was, essentially, nothing more marvelous than dried washing soda and a trace of common salt.

"Omne ignotum pro magnifico" (which may be freely translated: "The unknown always inspires awe"), wrote Tacitus, in his classical biography of Agricola. This thought, recognized even in the first century of the Christian era, finds its practical application as the keynote of one of the least creditable activities—the "patent medicine" industry—of the people of the twentieth century.

[The fifth article of this series will appear in an early number of Hygeia.]

Summer Drinks for Children

ALICE IRWIN

THE question "What can I give my children to drink on hot summer days?" is asked so often that it seems that the number of mothers who find this a particularly bothersome problem is legion. Yet I suppose that the number of times each summer the average mother has to hear the petition "I want a soda" or "I want an ice cream cone," would be an appalling figure.

The daily demand for ice cream cones or sodas is a bad habit for several reasons. In many neighborhoods the cleanliness of the local stores may be questioned. The corner Greek candy store, which is frequently patronized, may manage to get by when the municipal inspectors come to visit, but would scarcely comply with all the requirements of sanitation. From the standpoint of healthfulness, the wisdom of gulping down much ice cold food is doubtful. And from the standpoint of cost—how few families can afford even five cents to each child daily through the summer season, for of course anything which one child in the family is permitted to have, every other child in the family must have.

When the children are hot and tired and thirsty and want something cool and refreshing, why not let them make a drink for every one in the family? This is far better than giving them dimes to spend at the corner drug store — better for health, wealth, and discipline. These recipes by Miss Irwin, a practical dietitian, are planned for the interested mother.

I asked one mother of two children, a girl of seven and a boy of five, how she meets this particular problem. I knew that ice cream cones cost seven cents in her neighborhood, and sodas ten, and that she would not feel that fifty cents should be allowed each of her children for this purpose weekly. I knew that she would have other objections to this practice too, and that since she lived in the same block with families who are not quite so conscientious in taking thought of what is best for their children, it must be hard for her small boy and girl to see the other children going gaily off to the corner drug store on a hot afternoon when they may not.

Her plan is to allow the children refreshment at home. She keeps a supply of lemons on hand and iced water always in the refrigerator. It is her small daughter's privilege to go into the kitchen whenever she pleases and use one lemon to make two glasses of lemonade, one for the small brother and one for herself. She is not allowed to chip off ice, but the iced water is there for her use. It happens that this little girl has an allowance, and her mother has pointed out to her that the saving in money she makes by making her drinks at home may be added to an amount she is putting aside to buy a coveted toy.

Milk

Milk is the drink par excellence for children at any time of the year, and if it is possible to keep a supply of it on ice in order that the children may have it whenever they wish, the problem of summer drinks for children will be solved to a large extent. Milk served in pitchers or tall tumblers of colored crystal or with those fascinating hollow-tubed glass spoons which have bowls of colored glass may often prove more tempting than milk served in a more prosaic manner.

Lemonade

Next to milk as a summer beverage for children comes lemonade. Plain lemonade may be made with the basic proportion of one lemon, one tablespoon sugar, and one glass of iced water for each portion. The average amount of juice yielded by a lemon is one-fourth cup, and although a lemon to each glass of water is the proportion given for adults, children are usually just as well pleased if a lemon is used to each two glasses of water. But the amount of sugar, one tablespoon for each glass, will probably still be wanted.

Here are some variations of the ordinary lemonade recipe, which like all standard recipes, is planned to serve six portions:

Plain Lemonade

1 cup sugar. 6 cups water. 6 lemons.

Heat the sugar and water to the boiling point; chill and add lemon juice.

Fruit Lemonades

For raspberry, strawberry, or blackberry lemonade, add two cups of berry juice.

For ginger ale lemonade, add two cups ginger ale.

For grape juice lemonade, add one pint grape juice.

For fruit lemonade, add two cups finely diced fruit—peaches, strawberries, oranges, grape fruit, or a mixture of fruits.

For pineapple lemonade, add two cups of pineapple juice or a No. 2 can of grated pineapple.

An imitation mint julip may be made by adding from six to twelve sprigs of mint to the hot syrup.

For prune lemonade, add two cups of prune juice.

For egg lemonade, add from four to six well beaten eggs, mixed with one-half cup of sugar.

For the mother who has reason to try to introduce larger quantities of nourishing foods into her children's diet, an oatmeal lemonade is recommended.

OATMEAL LEMONADE

1½ tablespoons fine oatmeal.	3 pints boiling water.
A few grains salt.	3 tablespoons sugar.
3 tablespoons cold water.	Juice of 1½ lemons.

Mix the oatmeal and salt with the cold water; add them to the boiling water and cook until reduced to a quart. Strain, add sugar, and, when chilled, add lemon juice.

ORANGEADE

Orangeade is made in precisely the same way as lemonade and is a popular drink with children. The addition of one lemon to each two oranges improves the flavor for adults.

Plain orange juice, if ice cold, is particularly refreshing and is of great importance in the feeding of undernourished as well as of normal children.

Almost all children like the flavor of chocolate; an iced cocoa syrup may be prepared and kept on hand ready for use.

ICED COCOA SYRUP

2 cups cocoa (1 pound).	⅛ teaspoon salt.
2 cups granulated sugar.	2 cups lukewarm water.

Mix the cocoa, sugar, and salt, and add the water slowly. Bring to boiling-point and boil for ten minutes. Place the mixture in the top of the double boiler and continue cooking for thirty minutes longer. Fill hot sterilized bottles to overflowing and seal.

When the syrup is served, one fourth cup of this mixture is added to one pint ice cold milk or water.

Here is a recipe for blackberry syrup which may be kept ready to serve.

BLACKBERRY SYRUP

2 quarts berries.	1 pound syrup.
2 cups sugar.	1 teaspoon cloves.
2 inches stick cinnamon.	1 teaspoon allspice.

Wash the berries well, put them in a preserving pan, and heat slowly, stirring often, until the boiling point is reached. Do not add water. Strain through cheese cloth. Add sugar and spices which have been tied in a small cheese cloth bag. Boil for thirty minutes. Add one pint boiling water. Fill sterilized bottles to overflowing and seal immediately. The spices may be omitted if they are not desired.

ICE CREAM

Children enjoy ice cream so much that a moderate use of it is permissible all the year round. Ice cream for dessert for Sunday dinner is always a treat and may be especially welcome if served with fresh crushed fruit or like a chocolate or butterscotch sundae. The sauces may be made at home at about one fourth the cost of those purchased in the stores.

CHOCOLATE SAUCE

1 cup sugar.	2 cups water.
2 tablespoons cornstarch.	A few grains salt.
6 tablespoons cocoa or	1 teaspoon vanilla.
2 squares unsweetened chocolate.	

Mix the sugar and cornstarch; add the cocoa or melted chocolate. Add water and heat the mixture to the boiling point; boil five minutes. Add salt and, when cool, add vanilla.

BUTTERSCOTCH SAUCE

3 tablespoons flour.	1½ cups boiling water.
1 cup dark brown sugar.	1½ tablespoons butter.

Mix the flour and sugar; gradually add the boiling water. Bring to the boiling point and add butter. Remove from fire and cool. If desired, twelve marshmallows may be cut into halves and added to this.

MARSHMALLOW SAUCE

1 teaspoon gelatine softened in	
1 tablespoon cold water.	White of 1 egg.
1 cup sugar.	A few grains salt.
½ cup water.	½ teaspoon vanilla.

Put the gelatine into the cold water to soften. Heat the sugar and water until the syrup spins a thread (238 F.). Remove the syrup from the stove, add the

softened gelatin, and then let stand while the white of an egg is being beaten until stiff. Pour the syrup slowly over the egg white, and beat until they are thick and creamy. Add the salt and vanilla. Should this sauce stiffen through standing, it is only necessary to put it into a bowl in a pan of hot water, and beat with a Dover egg beater until the sauce is again creamy. Any of these sauces will keep for several days in a cool place.

Plain Facts About Health and Disease

HEALTH NEWS OF THE MONTH

Tryparsamide in General Paralysis

In the year 1915, Drs. Jacobs and Heidelberger, American chemists, described the preparation of a new form of arsenic in organic combination, to which they gave the name "tryparsamide." The product was then submitted to intensive investigation on animals in the Rockefeller Institute. The workers found that animals infected with spiral organisms, such as those of syphilis, could be successfully treated with this drug. These favorable results led Drs. W. F. Lorenz, A. S. Loevenhart, W. J. Bleckwenn and F. J. Hodges of the University of Wisconsin to test the effects of the drug on patients with general paralysis and with locomotor ataxia in a hospital for the insane in Wisconsin. Following the treatment, twenty-one of forty-two patients with advanced general paralysis were discharged and were able to go to work. Seven of twelve patients in the early stages of the disease fully recovered their normal mentality; the other five seemed mentally able to earn their living, although still presenting signs of the disease, as shown by laboratory investigation. Among the other patients treated were twelve with fairly early cases who showed merely excitable disorders instead of mania; fourteen who were entirely free from mental symptoms, but in whom laboratory examinations revealed signs of early development of this disease; ten with locomotor ataxia; and nine who had characteristic symptoms of syphilis of the nervous system. The patients made a decided gain in weight, and their general health seemed remarkably improved. It was found that treatment with tryparsamide and mercury combined tended to make the improvement more stable. The only drawback to the treatment seemed to be the possibility of injury to the eye with this preparation, as occurs with the arsphenamine, usually known by the trade name salvarsan (606), and other preparations of arsenic originally described by Ehrlich.

It is known that approximately 5 per cent. of persons with syphilis develop general paralysis and from 30 to 40 per cent. of persons with syphilis show late symptoms which relate to the spinal cord and the spinal fluid. The power of tryparsamide to penetrate to the spinal fluid when injected into the blood is greater than that of any of the other arsenic combinations, according to the work of two members of the United States Public Health Service, who have tested various drugs used for the treatment of syphilis. While tryparsamide cannot be called a cure for general paralysis and locomotor ataxia, the effects, as reported by the Wisconsin investigators, appear to be more striking than any heretofore reported.

Another Treatment for Tuberculosis

Lately publicity has been given by the press to a possibly effective treatment for tuberculosis worked on at the National Jewish Consumptive Hospital in Denver. Experiments carried out under Dr. H. J. Corper seemed to indicate that "carbon dioxide gas has an inhibitory effect on the growth of the bacilli of tuberculosis." This is the simple statement of Dr. Corper. It is a far cry from this statement to the assertion that the work constitutes the development of a tuberculosis cure. The work has been confined wholly to animals and may be considered merely a suggestive experiment.

An Alleged Cure for Tuberculosis

Early in May, the Associated Press carried a story from Pittsburgh to the effect that one Dr. W. P. Nolan had described "a cure for pulmonary tuberculosis by the use of pure carbon and calcium." Readers who have followed the editorials in HYGEIA on the inhalation of dusts will realize the basis for Dr. Nolan's belief that he had described a remedy of benefit. It rested on the fact that workers in lime, a form of calcium, seem to have tuberculosis less often than do others, and that the inhalation of coal dust seems to produce changes in the tissues of the lung similar to those which accompany the healing of lesions of tuberculosis. Unfortunately, such reliable experimental evidence as is available does not warrant the assumption that treatment such as that suggested by Dr. Nolan would have any curative effect in tuberculosis. The facts

are that his "consumption cure" is essentially secret in composition, is put forward on a basis of utterly inadequate tests made only by himself, and is exploited in connection with an instrument sold only by its inventor. The tragedy of the case is not in the fact that a reputable physician has allowed his enthusiasm to run away with his judgment, but that thousands of optimistic consumptives are to have their hopes of a quick cure blasted again.

A Treatment for Cancer

During the month newspapers have carried the announcement that Blair Bell, professor of gynecology and obstetrics in the University of Liverpool, has described a preparation for the treatment of cancer, which has been successfully used in fifty cases. Later editions tended to correct this preliminary statement by interviews from American physicians. The fact is that Professor Bell described his experiments in the London *Lancet* last November. He had treated fifty patients with a solution called colloidal lead lecithin. This treatment was based on the belief that combinations containing lecithin would tend to localize in cancerous tissue and that the lead would have a specific effect in killing the cancer cells. Professor Bell had used the method over a period of two years, and in only two cases was there apparent recession of the cancer; in two other cases possible benefit was reported. Because of the scientific standing of Professor Bell his work is of great interest, but he points out that it is wholly experimental; that it is merely being put on record; that it is suggestive only; and that there is no reason to accept the report as anything but a preliminary statement. Certainly the solution described cannot be called a cure for cancer, as it was characterized by the press.

M. F.

THE PREVALENCE AND FATALITY OF SMALLPOX

IT IS often asserted by the opponents of vaccination that the greatly lessened frequency and severity of smallpox are not due to vaccination, but to the fact that the disease itself has, for some unknown reason, developed a mild form. That this is not true is proved by the fact that whenever and wherever smallpox appears in a community in which many unvaccinated persons are exposed to the contagion, 90 or 95 per cent. become afflicted. The disease shows itself in some severe forms, and results in as high a proportion of deaths as occurred one hundred and fifty years ago, before the days of Edward Jenner, the discoverer of vaccination.

In the *Epidemiological Report of the Health Section of the League of Nations* for April, 1923, it is stated that in "Constantinople from March 9 to 23, 1923, there were 1,641 cases of smallpox with 409 deaths, a death rate of 24.6 per cent."

In the 9,936 cases of smallpox reported in the United States and Canada in 1922 the death rate was only 5 per cent., but in some of the cities where the disease was especially virulent, death rates were reported of 16, 20, 39, and 46 per cent., and in one city as high as 85 per cent. These death rates are quite as high as those which characterized the disease in its palmiest days.

J. M. D.

A SAFE AND SANE FOURTH OF JULY

TWENTY years ago, and previously, there was an appalling number of accidents and deaths due to our methods of celebrating the Fourth of July. In 1903 the *Journal of the American Medical Association* began to tabulate and report these injuries and deaths. In that year, 4,449 persons were injured and 466 died from the effects of Fourth of July fireworks. Most of the deaths were due to lockjaw, this being the cause in 406 of the 466. Tabulated reports were continued by the Association through 1916. At first but little attention was paid to these statistics and in spite of their annual publication, the number of casualties continued to increase until 1908, when there were 5,623 accidents. The newspapers then took up the matter and reported the number of injuries and deaths in their localities. This touched local pride, and in that year there were no deaths from lockjaw due to Fourth of July celebrations. Appeal is now made through this notice to continue to provide for a safe and sane Fourth of July. We hope every community in our country will bear in mind this important matter. There is no reason for a return to the noisy demonstrations in which we formerly indulged.

In the beginning of the World War preventive doses of lockjaw antitoxin were neglected, and the use of this agent was delayed until symptoms of the disease appeared. In the British army the incidence of cases of lockjaw to the thousand of wounded reached the highest point in September, 1914; it included those who were wounded in the battle of Mons and the battle of the Marne.

In the following month doses of lockjaw antitoxin were ordered in all cases of wounds. The result was immediately apparent and the number of wounded who developed lockjaw rapidly decreased. Before the war closed this disease became almost a negligible factor as a cause of death. Even when the preventive dose did not entirely hinder the development of symptoms, it modified the effect and decreased the number of deaths. This does not mean that lockjaw antitoxin is of no value in the treatment of the disease, but that the greatest good may be expected when it is administered at the time when the injury is received. Among the romantic incidents of the World War may be recalled the fact that lockjaw was prevalent among the besieged British soldiers at Kut-el-Amara until an aviator arrived with a supply of antitoxin.

In war wounds and in wounds due to fireworks in Fourth of July and other celebrations, the lockjaw germ comes from the dirt introduced into the wound. Therefore, the slightest injury should lead to a consultation with a physician who should clean the wound as thoroughly as possible and as soon as possible and then administer the antitoxin. Some soils contain the bacillus which causes lockjaw more abundantly than others, but all wounds should be treated in anticipation of possible severe complications.

V. C. V.

THE FIRST AMERICAN BABY SHOW

IN THESE days of infant welfare and child study, the "baby show" has reached almost the height of its development. Mothers now realize the value of periodic examination as an aid in determining the rate of the child's growth and as a corrective of factors which may detrimentally be influencing the child's development. It may be interesting to learn that probably the first baby show conducted in the United States originated in the mind of the world's greatest showman, Phineas Taylor Barnum, and that it was conducted in his famous museum in New York. The astute Barnum was ever on the lookout for new features to attract the multitude to his exhibition. In addition to the still exhibits which were the stock of trade he staged special performances in his "moral lecture room," and shortly after he became manager of the museum it occurred to him to supplement his special exhibitions by dog shows, poultry shows, and baby shows. He organized an exhibition of babies with graduated scales of prizes for triplets, the fattest baby, the most beautiful baby, and the handsomest twins. As described by M. R. Werner, in his recently published biography of the great showman, the main prize of $100.00 for the baby most nearly perfect was a source of considerable difficulty. Barnum, therefore, decided to award this prize himself, probably with an eye to the matter of publicity. At the time of the award of the first prize the defeated mothers stormed about Mr. Barnum and he was greatly distressed until he thought of a method to appease their indignation. He announced that a second prize of $100.00 would be given to the baby selected by a committee of mothers, where-

upon, says Mr. Werner, each mother became the enemy of every other and Barnum's $100.00 was saved. In deciding future baby contests Barnum sent in written reports and was not to be disturbed the rest of the day. A facsimile of his specially designed reward of merit, conferred in 1863, is appended.

M. F.

"BUILDING SOUND BONES"

SUNLIGHT and nourishing food mean a sturdy youngster, almost too active for the mother's peace of mind, the lack of them means a round bellied little child waddling on bowed skinny legs. It isn't always the child of the wealthy who is sturdy, however, for although his parents can afford sunlight, they also afford food too rich for his little digestive system and entertainment too frequent and too exciting for his little nervous system. But with many poor families in the cities there is slight chance of the right kind of food; the light of the sun can hardly make its way past the upper stories in narrow streets. If there are only two or three windows to a family, what chance does a baby have of monopolizing enough sunlight for its good? Moreover, in the winter there may be no one to take the baby out, or it may not have enough warm

clothes to be taken out in the cold to find a few stray rays of the sun in a vacant lot or on a street corner. And even if the baby stands at the window, to absorb the rays of light which may happen its way, they may not keep away the rickets. Experimental work proves that ordinary window glass filters out many rays of the sun that are rickets-preventing, and that the moisture, smoke, and dust that cloud the air of most city streets of the poorer districts absorb much of the light. Furthermore, we are told that what rays of the sun are to be had in such districts are not likely to get through to the skin of the little tot sewed up in heavies for the winter—if they find it out at all—for it has been learned that clothing too acts as a filter of sunlight, and sometimes does not let through enough light to be of any use as a preventive.

In New York City the Association for Improving the Condition of the Poor has found a pitiful prevalence of rickets in the Mulberry District. About every fourth child has some defect or deformity as a result. These youngsters are more susceptible to all other diseases, particularly to pneumonia and other affections of the respiratory tract than are well nourished children. The Association has started work to prevent repetition of such numbers of sickly babies among those under two years of age, for during this period rickets develops.

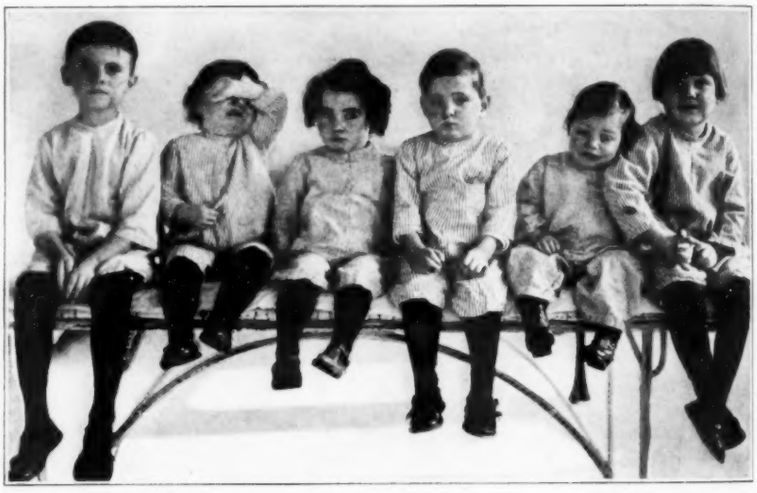
In the *Survey* for April 15, 1923, is given the program of the Association. Since it is impossible to find sunlight for the babies in the congested districts and impracticable "to persuade mothers either to place the baby stripped before an open window in the sunlight or to bring it to the center daily for exposure to a quartz lamp," it was decided "to attempt to see that all babies during the period of susceptibility receive cod liver oil three times a day in quantities prescribed by the physicians of the committee." This course was adopted since it has been found that cod liver oil contains the ingredients necessary to the building of sound bones, and is assimilated in such a way as to prevent the development of rickets.

The children are to have periodic examinations, supplemented by x-ray pictures of the forearm and the wrist. The Association will thereby collect "evidence as to whether rickets was present at the beginning and cured during the period of treatment or whether it was not present and was prevented from occurring." But apart from whatever the Association may accomplish as a contribution to the scientific knowledge of rickets, it hopes by its attempt to provide calcium for sound bones through feeding with cod liver oil, to educate the mothers as to the seriousness of rickets as a disease of childhood, and to persuade them to use the simple remedies recommended by the medical profession.

H. M. H.

LYE—A DANGEROUS POISON

THE distressing results of carelessness in the handling of lye, caustic soda or potash, are again emphasized by the report from a Philadelphia clinic of the treatment of twenty persons within sixteen months for the disastrous effects of swallowing lye.



Six of the twenty patients admitted to the Bronchoscopic clinic, Philadelphia, during the last sixteen months suffering with stricture of the esophagus from swallowing caustic alkalis put up in packages for household use. The photograph was taken some months after admission, when the children were much improved by treatment. Most of them were in a pitiable state of emaciation when admitted.

In practically every case of this kind the lye is swallowed accidentally by a young child after some person has carelessly left the lye on the kitchen table or sink or on a low shelf within reach of the little one's fingers. When swallowed, lye produces a violent inflammation of the esophagus (the tube leading from the mouth to the stomach); the esophagus becomes constricted, and often completely closed, thus making it impossible for the victim of the accident to swallow food or even water.

The carelessness with which lye is placed within the reach of children would not be so common if the fact that it is a dangerous poison were generally known. Lye may be

purchased by anyone at any grocery, and the labels of most of the commercial brands print no warning whatsoever that the content of the package is a poisonous substance. Death within a short time after lye is swallowed is not uncommon. If the patient survives, the results are lamentable.

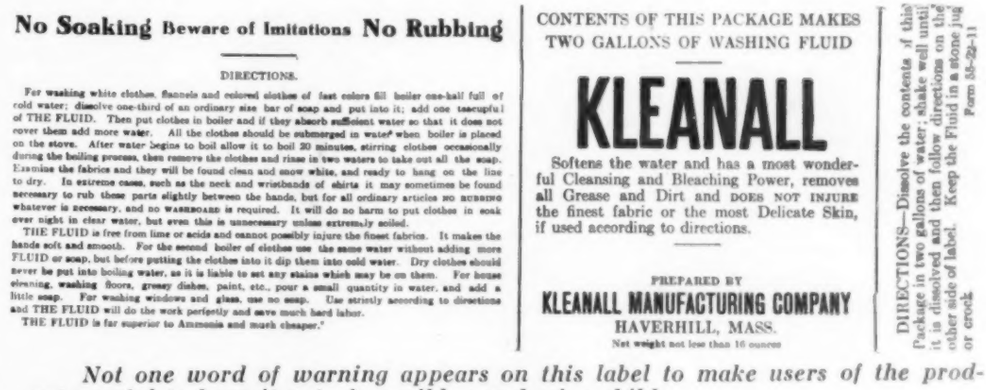
This child swallowed a teaspoonful of "Kleanall Lye," which had been left in a saucer. After most accidents such as this the victim cannot swallow, and the only food that can be taken into the stomach is through a tube introduced through an incision.

It is difficult to understand why laws have not been passed in every state compelling the manufacturers of lye to place conspicuous scare-labels on every package. Among the brands which had been swallowed by the members of the group who were treated at this clinic in Philadelphia, were "Sterling Lye," "Babbett's Lye," "Red Seal Lye," "Red Devil Lye," and "Kleanall."

The pathetic condition which causes so much suffering and distress to these innocent patients is brought about because it is not realized that lye, caustic soda, caustic potash, or any article containing these substances, are danderous poisons. Parents and domestic servants should be strongly and repeatedly warned to keep such materials out of the reach of all children.

Legislators should be aroused by the communities they represent to the need of laws compelling manufacturers of lye to label every package "Poison."

J. M. D.


No Soaking Beware of Imitations No Rubbing
DIRECTIONS.
For washing white clothes, flannels and colored clothes of fast colors fill boiler one-half full of cold water; dissolve one-third of an ordinary size bar of soap and put into it; add one teacupful of THE FLUID. Then put clothes in boiler and if they absorb sufficient water so that it does not cover them add more water. All the clothes should be submerged in water when boiler is placed on the stove. After water begins to boil allow it to boil 20 minutes, stirring clothes occasionally during the boiling process, then remove the clothes and rinse in two waters to take out all the soap. Examine the fabrics and they will be found clean and snow white, and ready to hang on the line to dry. In extreme cases, such as the neck and wristbands of shirts it may sometimes be found necessary to rub these parts slightly between the hands, but for all ordinary articles NO RUBBING whatever is necessary, and no WASHBOARD is required. It will do no harm to put clothes in soak over night in clear water, but even this is unnecessary unless extremely soiled.
THE FLUID is free from lime or acids and cannot possibly injure the finest fabrics. It makes the hands soft and smooth. For the second boiler of clothes use the same water without adding more FLUID or soap, but before putting the clothes into it dip them into cold water. Dry clothes should never be put into boiling water, as it is liable to set any stains which may be on them. For house cleaning, washing floors, greasy dishes, paint, etc., pour a small quantity in water, and add a little soap. For washing windows and glass, use no soap. Use strictly according to directions and THE FLUID will do the work perfectly and save much hard labor.
THE FLUID is far superior to Ammonia and much cheaper.
CONTENTS OF THIS PACKAGE MAKES TWO GALLONS OF WASHING FLUID
KLEANALL
Softens the water and has a most wonderful Cleansing and Bleaching Power, removes all Grease and Dirt and DOES NOT INJURE the finest fabric or the most Delicate Skin, if used according to directions.
PREPARED BY
KLEANALL MANUFACTURING COMPANY
HAVERHILL, MASS.
Net weight not less than 16 ounces
DIRECTIONS—Dissolve the contents of this Package in two gallons of water; shake well until it is dissolved and then follow directions on the other side of label. Keep the Fluid in a stone jug or crock
Form 58-22-11

Not one word of warning appears on this label to make users of the product careful to keep it out of possible reach of a child.

THE INHALATION OF STONE DUST, SILICOSIS

LONG before the Christian era it was recognized that tuberculosis and other diseases of the lungs were more prevalent among stone masons than among men in general. Furthermore, it was then believed that the cause of this wide prevalence of pulmonary diseases among stone masons was due to the inhalation of the dust arising from their work. Even at that time attempts were made to protect each worker by causing him to wear a respirator, an apparatus to filter the air breathed. This, however, has never been satisfactory. The discomfort it causes is so great that the workman becomes regardless of consequences and casts his respirator aside. Moreover, it does not keep the dust out of the lungs, for the dust which proves injurious is exceedingly fine. Its particles are microscopic, some of them much smaller than red blood corpuscles. Only the very finest of the dust penetrates into the lung tissue; the coarser particles are caught in the nose, throat, and bronchial tubes and breathed out. The fine dust which proves injurious can penetrate any respirator which is pervious enough to permit the free inhalation of air. Indeed, it was stated by medieval stone workers that a bladder partly filled with water and hung above the cutters' work would be found, within the course of a year or two,

to contain appreciable amounts of sand. This gives some idea of the penetrating power of the fine dust. Dutch physicians of the seventeenth century found in performing autopsies on stone masons that the knife penetrated the lung as if it were cutting through sand.

For many centuries there was no distinction between the kinds of dust which produced these injuries. It was not until near the close of the last century that Collis and other English physicians recognized that the injurious effects on stone masons were in direct proportion to the amount of sand contained in the stone. Those engaged in cutting limestone and marble suffered but little, while those who dealt with sandstone suffered greatly. This discovery led to attempts to minimize the amount of dust arising from operations on these types of stones. In 1918, the Workmen's Compensation Act in England was modified so as to include among the diseases for which the employer is responsible that arising from the cutting of stone containing sand. For this reason this act is generally known as the "Silicosis Act." Dry drills have been supplanted by wet drills, which keep the dust from rising into the atmosphere. Fans have been introduced for carrying off the finely divided sand. These devices have greatly reduced the incidence of disease among workmen in these stones. When we look with admiration and wonder on the stone monuments created by medieval craftsmen, we are keenly aware of the great cost in lives of those who did the work.

V. C. V.

THE INHALATION OF METALLIC DUST, SIDEROSIS

PERSONS engaged in sharpening and grinding metals are liable to inhale the dust from the finely divided metal and that from the stone on which it is ground. The substitution of corundum for sandstone has led to great improvement. Wet grinding has supplanted dry grinding, and all these operations are now carried on under the protection afforded by properly arranged flues, in which the movement of air and dust is determined and controlled by operating fans. The inhalation of finely divided metallic dust leads to changes in the tissues of the lungs, and possibly increases the susceptibility of the individual to pneumonia and tuberculosis. More serious results may arise when the metal is of itself poisonous. We visit the great cathedrals of Europe and stand in admiration before the gilded holy images, perhaps unconscious of how many lives the production of these artistic objects cost. In medieval times all gilding with precious metals, gold and silver, was done in a manner which of necessity exposed the workmen to certain death. The precious metals were amalgamated with mercury and the figure covered with the amalgam. Then the mercury was removed or volatilized by heat, leaving the gold or silver in place. This was done without protection for the workmen, who inhaled the volatilized mercury.

Ramazzini, an Italian physician of the seventeenth century, wrote:

> It is well known what dismal plagues are inflicted by quicksilver upon goldsmiths and especially those who are employed in gilding silver or brass work. For as this gilding cannot be performed without amalgamation so when they afterwards come to dislodge this mercury by fire, though they turn away their faces, they cannot possibly avoid receiving some poisonous steams at the mouth, and accordingly we find that this sort of workmen do quickly become asthmatic, paralytic, and liable to vertigo and their complexion assumes a dangerous ghostly aspect. Few such workmen continue in that way to old age; or if they do not die betimes, their condition becomes so miserable, that death is all their wishes. Their neck and hands tremble, their teeth fall out, their legs are mauld with the scurvy.

Specific poisoning among workers in other metals, such as lead, arsenic, antimony, manganese, and zinc, deserves special consideration.

V. C. V.

IS CANCER INCREASING?

THE final answer to the question, "Is cancer increasing?" must be postponed until better mortality records are available. The city of Baltimore has recorded deaths from cancer since 1813, two years—1815 and 1823—excepted. Dr. William Travis Howard has taken advantage of this unusual opportunity to study the trend of mortality from cancer in that city. He considers a cancer any tumor which spreads into surrounding tissues and is able to form tumors in other parts of the body. Such a tumor on the face, for example, would grow through the skin into the muscles, into the bone, and other tissues. This manner of growing is called "invasion." Very small parts of a cancer may enter the blood or lymph streams, travel to other parts of the body, and start cancerous tumors there. This process is known as "metastasis." When cancer attacks an organ which is indispensable to life, cancer tissue replaces vital parts. Cancers thus may cause death in a few weeks. Some do not kill for several years. Invasion of sound tissues leaves poisonous products behind, which intoxicate the patient, making him pale and thin. Cancers are malignant.

Tumors which do not invade, metastasize, or intoxicate are benign. In some parts of the body a benign tumor may remain a lifetime. Benign tumors may grow within the skull, or they may grow very large in the abdomen, or chest. Undue pressure on vital organs in such places will cause death as surely as do cancers. It is not surprising that Baltimore physicians, generations ago, made no sharp distinction between deaths from cancers and deaths from benign tumors, but their records make the answer to our question difficult. Although Baltimore began in 1813 to summarize cancer deaths annually, not until 1875 do the records name the location of the cancer in the body. Deaths from "tumor" as distinct from "cancer" were occasionally recorded before 1833, but they were not so recorded consistently until that year. While deaths from "tumor" were not numerous compared with those from "cancer," the inference is plain, says Dr. Howard, that, until 1899, a considerable portion of the former belonged under "cancer." Crude death rates from cancer in Baltimore, as elsewhere, are misleading. The crude death rate from malignant and benign tumors in Baltimore in the last forty-five years appears to have increased 100 per cent., and the death rate from cancer alone 40 per cent.

How may these great increases in the death rates recorded from cancer be explained? To what extent are they true? The first factor to be considered is improvement in medical diagnosis. Great improvement in diagnosing inaccessible cancers has been made in recent years. We should expect, therefore, that the number of cancers recorded for the gastro-intestinal tract would have increased in recent years to a greater degree than the number of cancers of the female breast and uterus, which always have been easily recognized. And so it has. From 1876 to 1920, the crude mortality rate from cancer of the breast and of the female generative organs increased 67 and 42 per cent., respectively, in Baltimore, while that from cancer of the stomach, liver, and esophagus increased 160 per cent., and that from cancer of the intestines and peritoneum increased 550 per cent.

In Baltimore only a small proportion of deaths from cancer were in persons under forty, and an almost negligible portion in persons under thirty. An increase in the population of persons past middle life will raise crude cancer rates. This occurred in Baltimore. Between 1830 and 1920, the percentage of the population forty years of age or more rose from 15.7 to 28.5 of the whole, or 75 per cent. In the same period, the percentage of persons thirty years of age or more rose from 29.2 to 54.8, an increase of 55 per cent.

In the four years from 1917 to 1920, 17 per cent. of all deaths from cancer in Baltimore, on the average, were recorded in nonresidents. There is no evidence that any significant proportion of residents died from cancer or benign tumor outside the city. Dr. Howard concludes that the deaths of the many nonresident patients in Baltimore hospitals accounts for a considerable proportion of the increase in cancer mortality in that city. The evidence shows beyond doubt that cancer deaths in Baltimore have not increased at a rate even approaching that indicated by the crude figures. It seems safe to ascribe this decline to medical activities. J. F. H.

DR. WILBUR REPLIES TO A CRITIC

IN *Current History* for April appeared a criticism by one F. C. Kelly, entitled "Is Better Health Due to the Doctors?" In the May issue of the same magazine the editor says that numerous letters were received from physicians and others interested, attacking the statements of Mr. Kelly and asking for substantiation or authority for the attack. He publishes an answer in the same number, an article by Dr. Ray Lyman Wilbur, president of the American Medical Association, giving the case for medicine. This article probably will do far more to convince readers of the service which scientific medicine renders humanity than Mr. Kelly's contribution will to bring about a distrust of the physician. Dr. Wilbur points out that Mr. Kelly lacks scientific training and has a mind that is closed to fact. He points out that Mr. Kelly has confused sanitation with the work of the physician. "Better health" he says, "is due to the doctors because they have discovered and introduced facts regarding the recognition and prevention of disease into ordinary life." . . . "Civilized man has stopped drinking the discharges of other patients because the doctors have taught him to, as they have taught communities how to control the distribution of these living agents." Dr. Wilbur emphasizes the fact that the physician prolongs life every time he prevents disease, and that back of all preventive medicine lies diagnosis. Among the great discoveries, of which particular mention is made, are arsphenamine (salvarsan) for syphilis, insulin for diabetes, and the prevention of typhoid. "The same people who can understand that an

arsenic spray will kill the parasites on an orchard tree seem unable to appreciate," he says, "that salvarsan, an arsenical preparation, when injected into a human body harboring the living spirochaeta of syphilis kills all or most of them." Of particular interest is the following statement defining the types of physicians:

> The doctor must primarily be a diagnostician, and he must know the early manifestations of disease to protect his patient and the community. The doctor is honestly striving to do his best. Like all human beings, he is not and never will be uniform. Other human beings with varying religious beliefs will continue to look up to him or down at him, or askance at him. But none can sanely deny that his services in the aggregate have brought about better health, more comfort, and longer life. Those who have had the benefit of anesthetics rarely scoff at them. The man or woman whose life has been saved by modern surgery usually has a deep appreciation of what surgical skill means. It is easy for those unfamiliar with the great day-by-day services of the medical profession in practice and in research to scoff at their failures and to ascribe their successes to other agencies. The doctor lives in an atmosphere of suffering that is the most constant incentive to seek for relief for his patients in every possible way.

Dr. Wilbur concludes with an earnest plea that physicians be entrusted with public health problems. "Only those familiar with biological rules" he says, "can be trusted. It is as unsafe for a community to build a bridge without the authority of a trained engineer to approve the plans as for a community to make health laws without using the authoritative knowledge of the doctor. . . . The present professional training of the physician is the most severe mental discipline offered by our universities. . . . I venture to state" he concludes, "that if the people of the United States were willing to avail themselves fully of what is now known of the control of diseases and the care of the human body, and would spend as much for this purpose as they do for the protection of the republic from outside prospective enemies, we could ensure an average additional increase of ten years to the span of human life."

M. F.

"THE UNHEARD CRY THAT IS NOW HEARD"

IF there is such a class on God's earth as "underprivileged," it is the class of children that has suffered more neglect than all other unfortunate classes—the cripples. The blind, the dumb, the orphan, the illegitimate—all have received more or less recognition. But the crippled child, as a class, is only being looked after sporadically." This, writes J. F. Sullivan, is the "unheard cry that is now heard." And Mr. Sullivan, an editor, publicity manager and author, has the best of rights to speak. He is himself a "wheel-chair" cripple as the result of infantile paralysis; yet, with indomitable purpose, he has fought his way through the public schools to a successful independence.

Probably few persons who have not had the facts brought home by a more or less personal experience, realize the actual hardships and difficulties that the crippled child must meet. These are not only deprivation of pleasure, discomfort, and disappointment, inevitable in the handicap itself, but also many avoidable difficulties that a little foresight and consideration can remove. Many of these children are intelligent, ambitious, and alert, with undiminished longings for accomplishment, love, and happiness; but they may be unable to move without help or to use the ordinary tools and conveniences of the public school. Getting to school, climbing stairs, sitting at a desk may be impossible without help and may result in depriving them of the opportunity for success to which they are entitled. Sullivan asserts that in the United States there are approximately 300,000 crippled children under eighteen years of age—and yet the special public schools for cripples can be counted on the fingers. The cry is being heard and public interest is being aroused, but there is still need to spread the facts. The demand is not for surgeons, hospitals, appliances, and charity, but for the opportunity to secure an education and a chance to become a producer instead of a burden. This is a right and not a privilege, a right of which Americans proudly boast. Let us, in justice, help to make good the boast.

H. D. S.

HYGEIA

IN the dim ages men, recognizing the service rendered by medical science to humanity, considered it godlike. The Greeks established a shrine to Esculapius, god of medicine and healing, and rendered homage to him and to his daughters, who aided in the rites of the temple. Hygeia, the name of a daughter of Esculapius, was selected therefore as the symbolic name for this journal of individual and community health. The cover design of this issue presents a statue of the goddess, modeled after a drawing made especially for this publication by Mr. Leslie Forgrave. The design and the model are copyrighted by HYGEIA. The goddess is shown in a characteristic attitude, feeding the sacred serpent of the temple.

M. F.

HEALTH NEWS AND VIEWS

FRENCH SCHOOLGIRLS TO LEARN TO CARE FOR BABIES

France has found a new means of fighting infant mortality. For some time eight public schools in Paris and the province have given instruction, outside regular class hours, to girls more than ten years of age in the care of babies and young children. The girls are taken one morning a week to an infant welfare station where they receive practical object lessons. The minister of public instruction and the minister of hygiene have urged that similar courses be added to the regular school curriculum throughout the departments of France.

PRESENT STATUS OF YELLOW FEVER

April 28, 1923, the International Health Board reported that there had been an epidemic of an infection resembling yellow fever during March in Santander in northeastern Colombia. The disease first appeared in November, 1922, and rapidly spread, with seventy cases and twenty deaths between January 1 and March 7, 1923. The International Health Board has sent a commission to investigate the nature of this epidemic. Cases of yellow fever continue to occur in the states of Ceara and Bahia, Brazil. There have been three deaths on one plantation and it is reported that the total number of deaths amounts to about fifty. The Brazilian government has appointed a commission to investigate the situation and undertake measures for control. Sporadic cases of yellow fever have been reported from western Africa. One European woman, it is reported, died at Salt Pond on the Gold Coast late in January, and new cases among the natives in the same region have been recognized. Not a case of yellow fever has been reported officially in Mexico since the middle of December, 1922.

HEALTH BY RADIO

The Public Health Service has the distinction of being the first governmental agency in the world which is educating by radio. Health bulletins are released to broadcasting stations in all sections of the country, and there are now at least 2,000,000 receiving sets within reach of the stations open to the service.

MALNUTRITION AMONG SCHOOL CHILDREN

At least 20 per cent., and, according to some estimates, 33 per cent. of the school children of the United States are suffering from malnutrition resulting in general physical underdevelopment. This information is based on a report recently made public by the advisory committee on foods and nutrition of the National Child Health Council through the United States Public Health Service, which cooperated in its preparation. Malnutrition is not confined to any one class or race, but in many cities is apparently in evidence in the homes of the well-to-do, as well as of the families of more limited means. The condition was discovered through the weight and growth records of children and through their general appearance, showing listlessness, lack of color, and dullness, and sometimes by their restlessness and irritability. It is due chiefly to physical defects, faulty habits, and environment. The most common physical defects are obstructions, including adenoids in the nose or throat, which interfere with breathing, and decayed teeth, which breed germs and interfere with chewing. When such defects are remedied many children will develop normally. Faulty food and health habits—too little food, the wrong kind of food, and the wrong time for food—were also found to be important causes of malnutrition.

COLLEGE FRATERNITIES ASK FOR INSTRUCTION IN SEX

The college fraternities are asking their respective faculties for courses in sex instruction. They say that students have a desire for a clear and scientific understanding of the real rôle of sex and reproduction, inasmuch as such knowledge is capable of making life richer and more inspiring. This instruction is to include information on how the normal perfection of bodily, mental, and spiritual development of each person depends on sex; how the esthetic and emotional life is enlarged and enriched by sex; how the attractions and comradeship of the sexes may be made gross, or may serve the very highest happiness; how courtship and engagement may be made most developing and refining; how and in what spirit mates should be selected, and marriage and married life be made successful; how the sex mistakes of past generations may be avoided; how the fallacies of the lustful threaten the greatest chance of happiness man has; how young men and women may prepare themselves to insure happy married life, parenthood, and home-making; and how they may train their children so that they may avoid some of the mistakes of their parents. The spokesman for the fraternities holds that a knowledge of the problems of sex means much more for a young man than overcoming smut, escaping venereal disease, avoiding prostitution, or dishonorably deceiving the woman he is to marry. It means that he will come to see why he and she should be equally fine and continent before marriage and equally faithful after. It means loyalty to what is best in character and in home. It means a fit heritage for his children. It means that he will "carry on" in building up rather than tearing down what our ancestors have accomplished in establishing and cherishing the permanent comradeships of the home.

It is recommended that in each college a student committee be appointed to confer with the members of the faculty and arrange for satisfactory courses.

WHAT LANGUAGE DO YOU PREFER?

In New York City one does not have to understand English in order to hear public health lectures. The Bureau of Public Health Education of the Department of Health maintains a staff of speakers who lecture in Arabic, French, German, Russian, Yiddish, Greek, Italian, Lithuanian, Polish, Portuguese, Spanish, and Assyrian. During 1922, 500 lectures were delivered in these tongues and 3,211 in English to 106,594 persons in industrial establishments, labor union halls, churches, and public school buildings. The funds provided for this work are sufficient for lectures within the city only, but by special arrangement speakers can be secured for lectures outside the city.

A BUNCH OF BOUNCING BABIES

Look at them! Fourteen chubby babies in the Minneapolis Maternity Hospital, and not one of them crying. Every healthy baby properly fed, clothed, and managed, and allowed plenty of sleep, should be as contented as are these new citizens. A generation ago comparatively few mothers considered going to a hospital before the baby arrived. Why go to a hospital unless one were really sick? Now the maternity hospitals, with their equipment to take care of all complications, are an important factor in reducing the number of deaths of babies and mothers before and after the time for the babies' arrival.

Wide World

Wide World

WATCH YOUR HARMONICA

Is there a future Beethoven, Chopin, or Wagner among these zealous performers on the mouth organ? Lung power he may develop in this way—and have great fun in so doing—but the process is not without decided danger. It is to be hoped that all these youngsters have been taught neither to borrow nor to lend their cherished mouth organs—for that way danger lies, infection and contagion.

THE HARMONICA LESSON

What joy if the teacher of arithmetic or English or geography could arouse the degree of curiosity and attention shown on the faces of these children. No doubt most of them have already decided that they are going to play the harmonica just like this teacher when they grow up.

Wide World

International

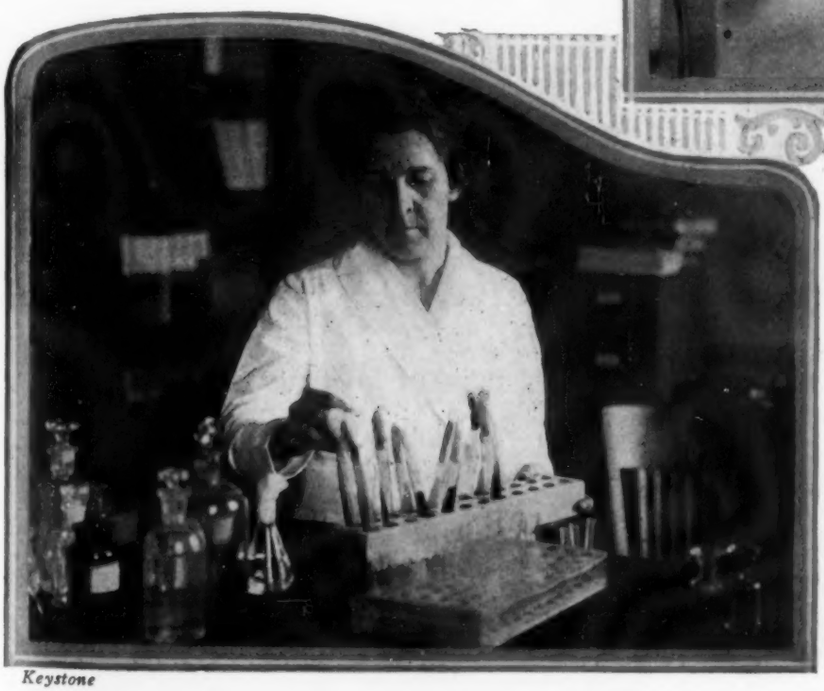
WHY THE BASKETS?

Quite evidently we need not pride ourselves on the "baby walking" devices of our country. In Anam the babies don't have to walk around in a circle or small pen; they can just get into their baskets and start out, while their mothers need not worry about bumping and bruising from possible falls. The mothers' peace of mind can hardly be complete, however, for it is reasonable to suppose that Anamese babies can get out of their range of vision with even greater alacrity than the American baby can make its getaway.

LAMPLIGHT WHEN SUNLIGHT IS WANTING

If the patient can't go to the sunlight, some light can now come to the patient. Persons with tuberculosis, affections of the air passages, rickets, and other diseases are greatly benefited by exposure to the rays of light of the sun, particularly at high elevations, or of the x-ray tube. This youngster is being treated for bronchitis by exposure to the rays of a lamp devised to furnish strong light. In most such treatments it is essential that the rays fall directly upon the naked body.

Underwood



Keystone

BATTLING WITH BACTERIA

Millions of bacteria in a few test tubes! The lives of millions of people depend on the knowledge obtained of these bacteria by the study of them in the test tubes. In the United States Public Health Laboratory bacteria are grown and studied for the purpose of finding some drug and the temperature that will kill them or combat their poisonous properties, of separating the known bacteria from those still unidentified, and of making serums and vaccines for treatment. Miss Alice Evans of the Hygienic Laboratory of the Public Health Service has done valuable work on the serum which is used in the treatment of epidemic meningitis.

NOW FOR A COAT OF TAN

The bicycle has been coming into favor again, especially as an aid to reducing superfluous avoirdupois, but a bicycle as a part of trout fishing equipment is a distinctly novel idea. It seems, however, to have furnished a satisfactory means of transportation for this man and woman, fully accoutered for a battle of wits with the wily trout. A full creel and a day of health building was, no doubt, the happy result.

Keystone

Wide World

CAMP FIRE GUARDIANS PRACTICE WHAT THEY PREACH

"K. P." duty is usually associated, dolefully, with onerous labor in dungaree or khaki. In this instance, the Camp Fire guardians, dressed according to the latest dictates for successful campers, are contentedly presiding over the modern sanitary substitute for the old iron cauldron. The result of this cheerful work will satisfy the healthy appetites of the guardians of the Camp Fire Girls attending the national conference at Bear Mountain.

COMMUNITY KITCHEN AND CAMP LIFE

"Kabobs" are interesting, lexicographically, as a source of vitamines necessary to good muscle tone, as the guardians of the Camp Fire Girls know. Seven guardians are broiling seven "kabobs" on seven sticks over a flint kindled fire. Camp Fire Girls are taught woodcraft, but a knowledge of trapping is not needed to catch a kabob. A culinary investigation reveals a kabob to be steak and vegetables wrapped together on a stick.

Wide World

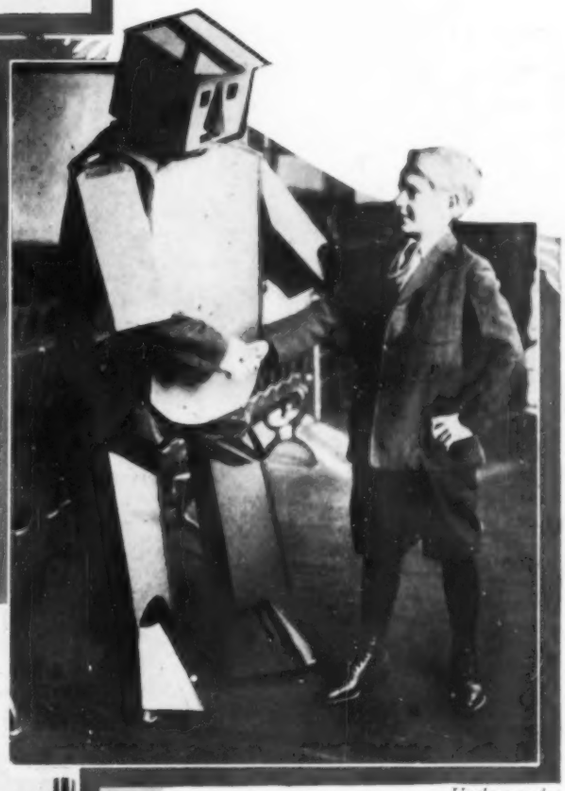
Wide World

HOW PLEASANT IN JULY

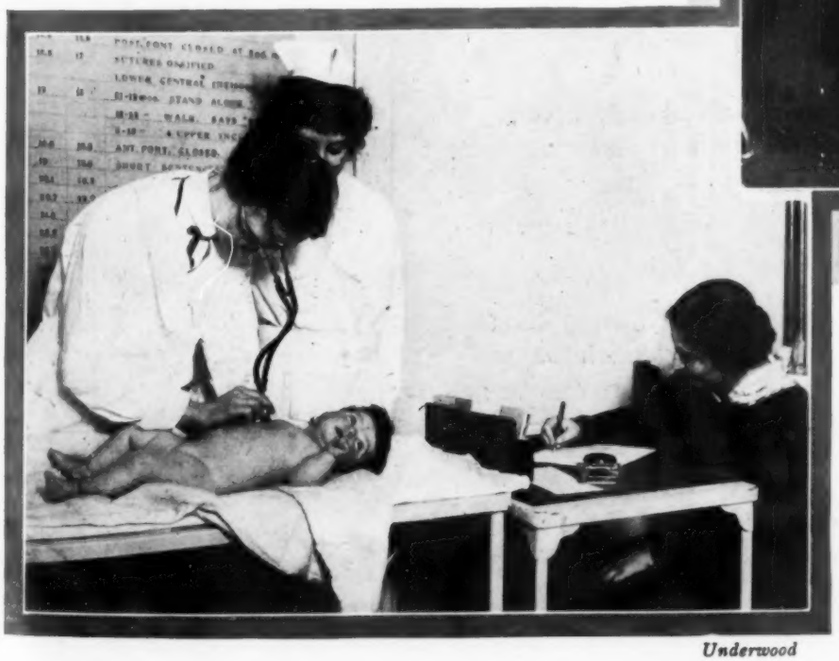
In this bedroom in the open air a patient with tuberculosis is winning her way back to health and life. It was taught by the great Trudeau that heat and a dry climate are not absolute necessities for the treatment of tuberculosis, but that patients can be treated successfully by a proper regimen in almost any climate.

NIMBLE NATHAN OF NUTRITION GAME

The school child may be taught good health habits by suitably selected games and amusements. It is necessary to resort to many devices to hold his interest. In the Lincoln School, Philadelphia, Nimble Nathan is teaching a boy the game of chewing wholesome food and eschewing tea, coffee, and sweets. The young man appears happy and will not soon forget. Nimble Nathan may be a blockhead, but he is full of solid sense and sound advice.



Underwood

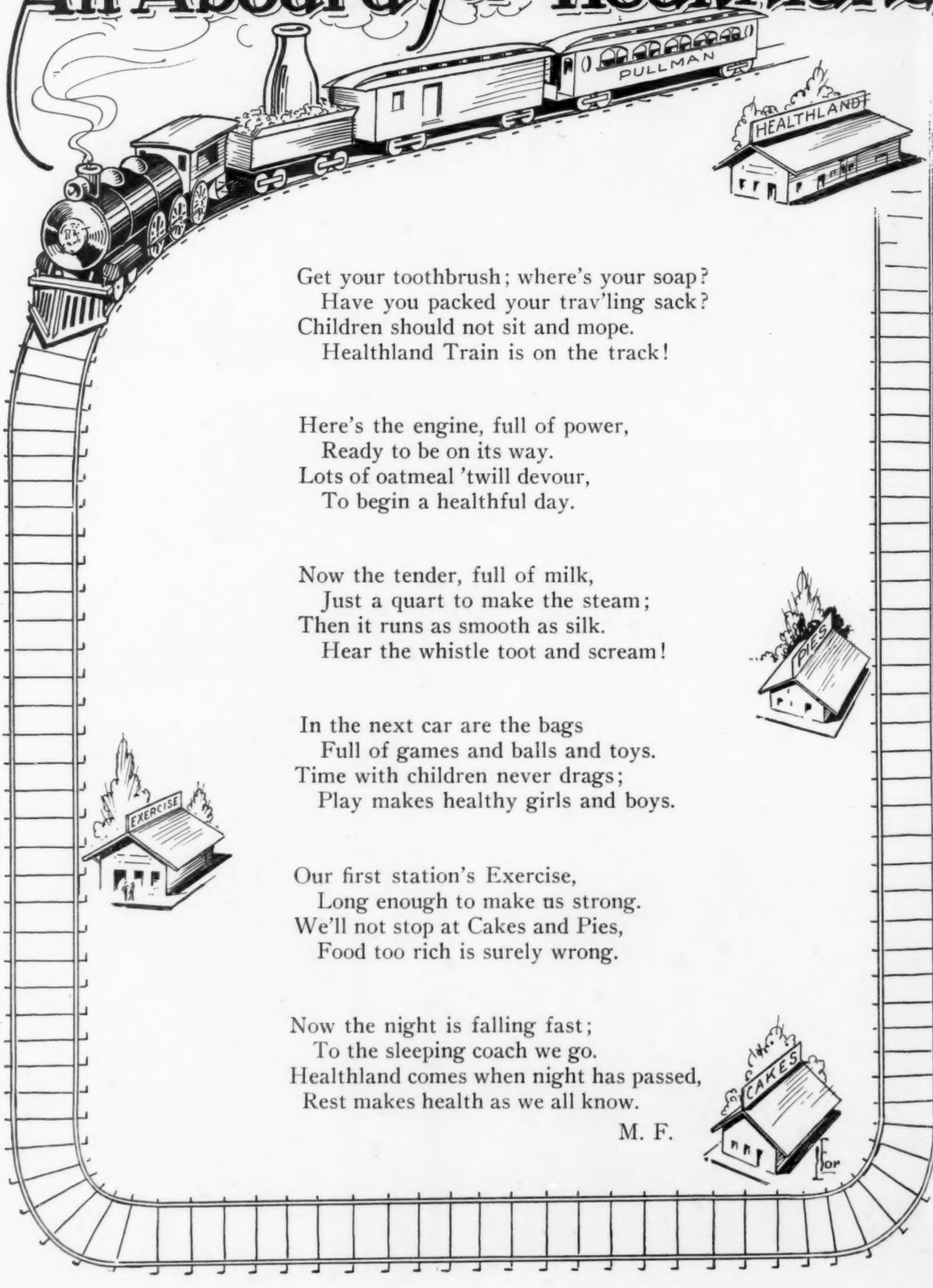


Underwood

EXAMINING A WINNER

The Children's Bureau, Washington, D. C., is offering to Washington mothers a complete examination of their babies in order to ascertain whether or not they are in first class condition. The information secured is being tabulated for a study of the factors which influence physical vigor.

All Aboard for Healthland



Get your toothbrush; where's your soap?
Have you packed your trav'ling sack?
Children should not sit and mope.
Healthland Train is on the track!

Here's the engine, full of power,
Ready to be on its way.
Lots of oatmeal 'twill devour,
To begin a healthful day.

Now the tender, full of milk,
Just a quart to make the steam;
Then it runs as smooth as silk.
Hear the whistle toot and scream!

In the next car are the bags
Full of games and balls and toys.
Time with children never drags;
Play makes healthy girls and boys.

Our first station's Exercise,
Long enough to make us strong.
We'll not stop at Cakes and Pies,
Food too rich is surely wrong.

Now the night is falling fast;
To the sleeping coach we go.
Healthland comes when night has passed,
Rest makes health as we all know.

M. F.

The Fourth of July

This is the punk that Jack had.

This is the match that lighted the punk that Jack had.

This is the cracker that touched the match that lighted the punk that Jack had.

This is the hand that held the cracker that touched the match that lighted the punk that Jack had.

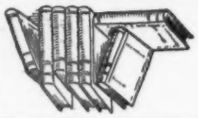
This is the bandage that wrapped the hand that held the cracker that touched the match that lighted the punk that Jack had.

This is the nurse all clad in white who rolled the bandage that wrapped the hand that held the cracker that touched the match that lighted the punk that Jack had.

This is the doctor who came that night to direct the nurse all clad in white who rolled the bandage that wrapped the hand that held the cracker that touched the match that lighted the punk that Jack had.

This is the sad and painful sight that greeted the doctor who came that night to direct the nurse all clad in white who rolled the bandage that wrapped the hand that held the cracker that touched the match that lighted the punk that Jack had.

GIULIA H. LUGINBUHL.



BOOK REVIEWS

IMPROMPTU: By Elliott Paul. Price, $2.50. Pp. 356. New York. Alfred A. Knopf. 1923.

When "Indelible" by Elliott Paul appeared last year, everyone agreed that it was a first novel of promise and power. It showed humane feeling and bitter cynical satire of equal strength. Now "Impromptu," following the lines of John Dos Passos' "Three Soldiers," reveals the same ability, somewhat heightened; it has artistic realism, utilizes cleverly the "throwback" of the stage and the "movies," and at the same time betrays a rather dangerous lack of reticence which prevents complete acclaim. But HYGEIA is not devoted particularly to literary review, so that we shall consider immediately certain aspects of the story that are of health or medical interest.

Somewhere about the middle of the book appears one Dr. Louis, a New England village physician. Paul records his doings with a sentient realism.

"Sunday was a lazy day for Dr. Louis. The Glendale patients were so accustomed to some sort of observance of the Lord's day that only the most severely ill failed to relax. Of course, the obstetrical cases now and then reached that climax which is both a beginning and an end, but Doc had very good luck with babies. He had administered the initial swat to so many of the Glendale young people that the Sabbath procession past his window often brought reminiscences which, had the boys and girls been aware of them, would have caused no end of embarrassment.

"Hmmmm. There goes Tilly Sawyer. Well, well. Quite a young lady. . . . Let me see. She was a L. H. P., wasn't she?" or "That must be Duck McVey going up the streets. A difficult R. P. High forceps."

Of all the alphabetic combinations that indicate the position of the unborn child, few could miss the possibilities any more than these. We have right-occipito-posterior, R. O. P., right mento-anterior and left mento-posterior, R. M. P. and L. M. P., and many others, but there are no diagnoses such as those included by Mr. Paul. It would pay our realistic novelists to check themselves up on these things, if only in the admiration of physicians and nurses whose minds now hesitate as they scan the errors.

Running through the story is a satire on the healing practice of the Eddyite cult. It is not perhaps a significant part of the story, but notice of it is vital, because it took courage on the part of the author to include it, and because few reviewers have had the courage to note it. The cult maintains a costly and efficient publicity department.

Celia, the elder of two orphaned sisters, has for some time been supporting the younger Dorothy. Celia is a confirmed believer, with all the old hokum. "There, there, dear, God is love" she says, "more than that we cannot ask." Eventually Celia fades physically beneath the strain of hard work and begins to have spells of weakness and pains in the heart. Finally it is up to Dorothy to support the family. She enters the "oldest of professions" and the amount of the family income varies with the prices that men pay for Dorothy's favors. During the years Celia passes into gradual decline. Her attacks become more frequent and she sustains herself with mental affirmations and whiskey, the latter seldom lacking owing to the work of Dorothy. For each replenishment of the family purse Celia has an Eddyite slogan. "There can be nothing evil in the divine mind," she murmurs. Finally when Dorothy has plumbed the very depths, Celia sits in her room at home and hears the chimes of the main C. S. church. She hurriedly attires herself and attends the service in the magnificent edifice.

"Across the auditorium, the words engraved upon the panel took life:

> If Sin Makes Sinners,
> Truth and Love
> Can Unmake Them.
> If a Sense of Disease
> Produces Suffering,
> And a Sense of Ease
> Antidotes It,
> Disease Is Mental.

"Through the reading of the lesson, Celia became more and more excited and when the time for testimonials came, something lifted her to her feet. Her voice, tremulous and uncertain at first, gained strength with each word.

"I wish to show my gratitude for what Science has done for me. I have been told by doctors that my heart was diseased and that I could not be cured. I have had the care of a younger sister and financial troubles that seemed insurmountable.

"Years ago, I made a beginning in Science but, it seems, I could not clear my mind of error at once. A few weeks ago, when things were at their worst, suddenly my slight knowledge of Science came to my rescue and I was able to meet the immediate obligation.

"My sister and I were obliged to move. Rooms were next to impossible to get and I do not know the streets of Boston well. The apartment I secured seemed to be dingy, squalid, and in most uncongenial surroundings. Since I moved in, I have been unable before tonight to leave the place.

"This evening something impelled me to raise the window and instantly there came into the room the tones of our Mother Church.

"I know now that nothing can harm me, nor my little sister. How grateful I am to God and to Mary Baker Eddy I cannot say."

At that very moment, as the reader knows, the little sister has reached the last stages of her degradation, and the elder, who is offering the testimony, is a besotted wreck in the last stages of physical dissolution. For this example of artistic satire and quite realistic exposure of fallacy, Mr. Elliott Paul deserves a measure of thanks.

WHAT TO EAT IN HEALTH AND DISEASE: By Benjamin Harrow, Ph.D. Associate in Physiological Chemistry, College of Physicians and Surgeons, Columbia University. Cloth. Price, $2.00. Pp. 203, with 17 illustrations. New York. E. P. Dutton and Company. 1923.

This is a guide to those who are ready to ask what we should eat and why we should make a choice. The book is founded on the discoveries of such men as Mendel, Osborne, Chittenden, McCollum, and others of like standing. It is a serious scientific work. In addition to telling what to eat and why we should make a selection, the author adds chapters on certain common abnormalities such as constipation, diseases due to faulty diet, diet in digestive disorders, and the nature of digestion.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. The names of correspondents will not be published.

Making Swimming Pools Safe

To the Editor:—We have a swimming pool in our little town. Last year a number of children had sinus infections that the doctors said were contracted while in swimming. I don't know what is being done to keep the pool clean, but I should like to know what should be done before I try to find out what precautions the town authorities plan to take this year.

D. R., Minnesota.

Answer.—Not infrequently, infections of the skin and of the air passages, extending to the sinuses and middle ear, have been traced to pollution of the water in swimming pools, the water of which is not changed often enough. Such pools should be disinfected at frequent intervals, preferably with chlorine. Liquid chlorine is supplied for this purpose. The addition of one part of chlorine to two million parts of water usually has been found to be sufficient. If the number of persons using the pool is large, the amount of chlorine should be increased to one part to the million. The exposure of the water to the ultraviolet ray is effective, but much more expensive.

What of Alopecia Areata?

To the Editor:—Will you tell me what you can about alopecia areata? Would severe nervous shock cause it? Are thyroid gland tablets helpful or harmful? Will Mrs. Rhodes Great Hair Maker help this condition? C. L. R., Georgia.

Answer.—One of the accepted theories as to the cause of alopecia areata [baldness occuring in definitely circumscribed patches] is that it may be of nervous origin. It is sometimes caused by parasites like ringworm and by syphilis. Certainly thyroid gland tablets should not be taken without the direction of a physician. We have no knowledge of "Mrs. Rhodes Great Hair Maker," except that it is claimed by the manufacturer not to contain any harmful drugs. It is certainly unwise, however, to use drugs whose composition is unknown.

Treatment of Tuberculosis

To the Editor:—1. Is there any treatment that will be of any benefit to tuberculosis besides rest? 2. Is it true that there is a serum being given in Europe that is thought to be a cure for tuberculosis? F. E., Colorado.

Answer.—In the treatment of tuberculosis of the lungs rest is the prime factor, but rest in itself, however faithfully it may be applied, is of little value. It becomes a valuable aid in the treatment of tuberculosis only if it is used in connection with other essentials. After a period of absolute rest, relative rest is resorted to, and with it gradually instituted exercise. Throughout the entire rest treatment, absolute and relative, other factors that must be applied with equal faithfulness in order that tuberculosis of the lungs may gradually be arrested are good and wholesome food, pure fresh air, contentment and ease of mind, and discipline, that is, strict obedience to the physician's orders. Besides the rest treatment in tuberculosis of the lungs, medical treatment should also be given according to the symptoms. There is no medicine known to the medical profession which will inhibit, in any measure, a tuberculous process in the lungs; nevertheless, suitable remedies, judiciously given as symptoms arise, are a valuable aid to the rest and exercise treatment. Incidentally, it may be wise to limit the use of the term "rest cure," since in many cases the treatment at best can only arrest the progressing tuberculous process. After years of vigilance it may be found that the "cure" was apparent only.

A serum, lymph, or vaccine has never been manufactured that in any way has the slightest inhibitive effect on the tuberculous process itself. Many of the so-called serums undoubtedly increase the immunity of the patient and in this way are of value in the treatment of tuberculosis, but they cannot be regarded as more valuable than other medical agents now generally used in treating the symptoms. Only recently, through the lay press and a limited number of medical journals, a European made serum received considerable publicity. This serum is supposed to have had its origin in a laboratory in Switzerland. It is said that the right to manufacture and distribute it was purchased by the British government, and that it is to be used as a curative measure at the various British sanatariums for tuberculous ex-service men. This, like all previously lauded serums, vaccines, and lymphs for the arrest or cure of tuberculosis of the lungs will probably fall by the wayside. Although biologic products have not given us much hope for successfully treating tuberculosis of the lungs, there seem to be some hopeful signs from chemotherapy, that is, treatment by chemicals.

X-Ray Treatment for Tumor of the Uterus

To the Editor:—Will x-ray treatment cure a tumor of the uterus of ten or twelve years' standing? F. E., Colorado.

Answer.—If a tumor of the uterus is a simple fibroid symmetrically developed and not larger than a uterus in the fourth or fifth month of pregnancy, treatment by x-ray sometimes results favorably. Radium is by many considered a better remedy than x-ray, however, since it can readily be placed within the uterus and its rays can come in more direct contact with the tumor than can the rays from the x-ray tube. Treatment by x-ray or radium is generally advised only for women more than forty-five years old. In younger women surgery is usually recommended for removal of the tumor since ray treatment sufficient to destroy the tumor is liable to stop menstruation and render the patient sterile.

Wyeth's Sage and Sulphur—and Other Things

To the Editor:—1. Do you recommend "Wyeth's Sage and Sulphur" for keeping the hair the natural color? If not, what is good to prevent gray hair? 2. Is there anything good to remove dandruff? 3. Is "Packer's Tar Soap" safe for shampooing the hair; if not, what do you recommend? 4. Why is coffee harmful for little children? W. D. B., Texas.

Answer.—(1) We do not recommend "Wyeth's Sage and Sulphur Hair Remedy." This preparation, when analyzed by government chemists, was reported to contain lead acetate, sulphur, glycerin and cayenne pepper. The government charged that the product was misbranded in that the name "Sage and Sulphur Hair Remedy" was false and misleading because it indicated to the public that the preparation contained

sage and sulphur, harmless medicinal agents, as its principal and most active ingredients, when, as a matter of fact, its principal and most active ingredient was lead acetate, a poisonous and dangerous substance.

There is no way of preventing gray hair. There is nothing that will postpone even the turning gray of the hair. It is a natural process as inevitable in its course as various other changes in the tissues, and it can no more be prevented or postponed than can the onset of old age. There is no way of "restoring" gray hair to its previous color. The natural color cannot be restored; it can only be imitated more or less successfully by dyeing the hair.

2. One preparation to prevent dandruff in scalps that are not irritated is an ointment containing from 30 to 60 grains of precipitated sulphur to the ounce of petrolatum.

3. "Packer's Tar Soap" is safe for shampooing the hair, although this, or any other soap, in certain individuals or under certain conditions, may cause some irritation. There is no soap so bland that it may not sometimes irritate. Tincture of green soap is a good soap for shampooing, although this, also, may occasionally prove irritating. Most of the better grade toilet soaps are also unobjectionable.

4. Coffee is harmful for children because of the stimulant drug, caffein, that it contains. There is no justification for giving to healthy growing children a drug such as caffein whether in the form of coffee or in the more subtle form of some of the caffein-containing "soft drinks" such as coca cola.

The Boarding House Bathroom

To the Editor:—How much real danger is there of contracting syphilis innocently? I live in a boarding house where I must share the bath with a number of other persons. I do not know that any one of them is infected, but I judge that it is wise to assume that some one might be.

M. K., Wisconsin.

Answer.—Many cases of syphilis have been contracted innocently. In a boarding house one should always use his own towel, wash cloth, soap, and any other toilet articles as exclusively as one's own tooth brush. The danger of transmission of syphilis from dishes and silver is probably slight in any boarding houses where they are carefully washed. Care should be exercised in the use of the bathtub and toilet. The tub may be scrubbed before using with a one to one thousand solution of bichloride of mercury, which should be rinsed off with plain water before the tub is filled.

Sleep for a Two-Year-Old Child

To the Editor:—My two years and three months old baby has been brought up on regular hours for feeding, naps, and baths. She is healthy with the exception of constipation, which is hard to overcome. She eats oranges, prunes, graham crackers, and other laxative foods. As a baby she always went to sleep after her bottle. For four months she has not had the bottle and since has made a great fuss and wears herself out before she goes to sleep. I put her in her bed and let her cry. She will stop and play if I take her up. When once asleep she sleeps like a log. She fusses so long in the afternoon, making her nap so late, that she will not go to sleep until ten at night. Any suggestion you might give would be thankfully received. G. H. M., Kansas.

Answer.—If your baby is growing as normally as you indicate and sleeps for from twelve to fourteen hours of the twenty-four, you may conclude, it seems, that the difficulty you have about her sleeping in the afternoon is due to the fact that she is slow in adjusting herself to the absence of the bottle. You are pursuing the right course, except that it would be wise to attempt to have her begin the afternoon nap two hours earlier than you do and thus gradually readjust her sleeping periods so that she will be ready for sleep and quiet at eight o'clock.

Formula Disclosure

To the Editor:—I am interested in ascertaining whether or not it is obligatory under the law for "patent medicine" manufacturers to file their formulas as a public record.

E. R. H., New York.

Answer.—No, unfortunately, it is not. The federal law does require "patent medicine" makers to declare the presence and amount of eleven specified drugs and their derivatives. See the article on "patent medicines" in this issue.

The Value of Registration of Births

To the Editor:—Will you please inform me through your columns what real benefits accrue to the human race because of the registration of births. Aside from a few cases of property involvement and the barring out of aliens, is it worth while?

E. K., Illinois.

Answer.—The registration of births is an essential factor in the computing of the death rate in any country. How can we know the percentage of children who die in a given community under certain conditions and at certain ages unless there is correct registration of births? Or, how can we know the percentage of those who die of a particular disease, for example, summer diarrhea of infancy? From the knowledge of how many children are born, at what age the largest percentage of deaths occurs, and the cause of the deaths at the various ages, it has been learned that the greatest prevalence of summer diarrhea occurs during the first two years of life; that summer diarrhea kills children during the first two years of life; and that the greatest prevalence and the greatest death rate is among those artificially fed. Artificial feeding consists largely in substituting cows' milk for mothers' milk. It has been learned that cows' milk under certain conditions becomes poisonous; consequently mothers are advised to breast feed their children. Breast feeding by most mothers and closer attention to cows' milk, when it must supplant mothers' milk, has led to the reduction of the death rate from summer diarrhea during the first two years of life within the last thirty years from more than 25 to less than 15 per cent. In other words, the lives of many thousands and tens of thousands of children have been saved by the knowledge gained, and this knowledge could not have been gained without proper and exact registration of births. This is only one illustration. Another might be added. It has been learned from knowing the number of children born and the age at which measles is most prevalent that this disease is highly fatal up to six years, and that after nine years it is seldom fatal. Further illustrations could be given. The registration of births is a most important factor in the calculation of rates of disease and death. Without correct registration of births, all of our vital statistics would be worthless.

Swimming During Pregnancy

To the Editor:—On general principles, is there any reason why a pregnant woman should not go in swimming when the water is agreeably warm, if she has always been used to swimming?

H. P., Nebraska.

Answer.—No, except during the last three or four weeks. She should not remain in the water too long, however, or become exhausted by swimming to the least degree. She should be careful to avoid slipping or falling or any sudden shock.

HEALTH REVIEWS

HEALTH IN CURRENT MAGAZINES

WOMAN'S HOME COMPANION

In "The Old Order Changeth" in the May issue, Dr. Ruth F. Wadsworth calls attention to various methods for controlling overweight. "There is only one rational way of losing superfluous pounds," she says: "Do not feed them." It is, of course, first necessary to know what the normal weight is; this point is covered by the usual table. It is then necessary to know whether one is afflicted by the familial, glandular, or overweight type of obesity. It is only in the latter class that much can be done by dieting. Dr. Wadsworth provides suitable diet lists for those who are overweight, and indicates the absolute necessity for holding to the diet. She recommends graduated exercises and cold baths, and that the fat lost be not more than two or three pounds a week.

The Keep-Well-Editor of the *Companion* offers pamphlets describing suitable exercises and lists of available literature on health.

In the June issue, the medical article is by W. R. P. Emerson. It is a general consideration entitled "What It Means to Be Well." This state is established by the fact that the child grows steadily week by week and month by month and is of normal weight for its height, and that, on physical examination are found good development, good muscle tone, good color, normal physical and mental reactions, and the absence of physical defects. A wide survey has shown that not more than two thirds of our children are in normal nutritional condition. The correction of faulty physical conditions in childhood helps to insure a healthful old age.

GOOD HOUSEKEEPING

Dr. Harvey W. Wiley in his department of *Good Housekeeping* for May considers the recent visit of Coué. Both the article and this reference to it seem somewhat late, since Coué has departed from the United States, and, apparently, had but little influence. It is Dr. Wiley's belief that Coué's visit was injurious in its effect on the morale of the community in that it called the minds of the people away from the fundamental concept on which good health and recovery from disease are based.

In an article, "Happy Babies and Happy Mothers," M. D. Jessup shows how much one group depends on the other. The general requirements, without which a baby is not likely to be consistently happy, he says, are a glad welcome, normal health, proper nourishment, regularity in feeding and sleeping, physical comfort, including a daily bath, clean clothing, regular action of the bowels, and treatment of chafed surfaces, and, finally, absolute cooperation between father and mother as regards the training of the child. Pacifiers, regular singing and trotting on the knees, the rolling back and forth in carriages, "putting to sleep," stuffing with unnecessary and improper foods, and excitement and weariness, including too much visiting, theater going and church going, make it impossible to train a child to be happy. The author analyzes the various types of crying, outlines a good schedule for the baby's daily life, and concludes by recommending a physician's care whenever the baby shows signs of illness. The article is practical and convincing.

Good Housekeeping conducts two departments of information concerning the care of the baby, and answers to questions on health. The babies' department, called "Health and Happiness Club," is conducted by Dr. Josephine H. Kenyon. This department provides a series of letters known as "The Baby's First Year," and a series on health and happiness. These are sent on receipt of name, address, and fifty cents in stamps by the Health and Happiness Club, Good Housekeeping, 119 West Fortieth Street, New York City.

MC CALL'S

Dr. Charles Gilmore Kerley, in a general article, "What Is Their Birthright?" emphasizes the fact that every child is entitled to "vitality," a condition marked by "capacity," "endurance" and "resistance." He makes a plea for prenatal care of the mother and for a suitable environment for the child, calling attention to the admirable work achieved by the Maternity Center Association of New York City. Previous articles by Dr. Kerley, containing suitable diets, have been collected in book form under the title "The Friendly Baby." Copies of this booklet are available through *McCall's Magazine*, 236 West Thirty-Seventh Street, New York City, at ten cents a copy.

THE DELINEATOR

Fielding H. Yost, athletic director of the University of Michigan, describes "The Need for Keeping Fit" in the June *Delineator*. Mr. Yost's article is a well sustained plea for systematic exercise by every member of the family. With his experience in the physical training of young men, he speaks authoritatively.

In the series of articles on "The Healthy Child," edited by Dr. L. Emmett Holt, Dr. Thomas W. Salmon begins a group on "Safeguarding Mental Health." Dr. Salmon, professor of psychiatry in Columbia University, has had extensive experience in the problems of mental diseases. In his articles he will answer many questions which constantly occur to mothers:

What do night terrors mean? How can sensitiveness be controlled? Should a child be forced to do something it is afraid to do? Is telling fantastic stories about things a child thinks it has done a sign of nervousness?

Dr. Salmon lays the basis for his replies in a consideration of the structure and function of the nervous system, and this forms the chief portion of his first article. In a later article these questions are to be answered directly. It is important to recognize the fact that the child has a mind; that it is a developing mind; and that it is a mind constantly modified by the minds of its elders.

PEOPLE'S HOME JOURNAL

C. Houston Goudiss departs somewhat from the discussion of foods in the June issue, and begins to discuss human physiology and nutrition. At once he falls into error and exaggeration. For example: "Today most medical men and students of criminology agree that decomposing food in the digestive tract is responsible for many misdeeds and the underlying cause of much crime." So far as we know, most medical men and students of criminology agree on nothing of the kind. Again he says, "Auto-intoxi-

cation is largely responsible for many of the chronic diseases which daily are increasing in number and fatality." Auto-intoxication is a sadly overworked generalization and the statement made means nothing; Mr. Goudiss is even convinced that auto-intoxication interferes with clear thinking. Again he says, "In this day with the increasing trend toward mental therapy, we are being wisely led by so-called new thought agencies to care for the body so that its everyday workings will not affect the mind." If Mr. Goudiss proposes to give scientific advice on the care of the health, he will not recommend new thought agencies for the care of the mind.

MODERN PRISCILLA

An excellent discussion of the importance of vegetables in the diet by Lulu M. Dow, associate professor of foods in Simmons College, deserves the attention of every woman interested in building up menus satisfactory from the standpoint of health. Miss Dow wisely points out the value of vegetables in providing sugar, starch, minerals, vitamins, and roughage. Her directions are especially calculated to save these valuable ingredients which are frequently lost by careless cooking.

THE SURVEY

"Sanitation and sanity"—we need both. Have we neglected the latter in the emphasis of the former? In the *Survey Graphic* for May, 1923, Dr. Haven Emerson states his belief that sanitation—health of body—will come faster if sanity—health of mind—is cultivated and made a subject of national concern. It is mentality and cultural emotions that set us apart from the rest of the animal kingdom, and disease is often the harvest of slothful minds. Yet such minds cannot always be said to be diseased; they simply have not been cultivated. The diseases to be overcome are the "communicable diseases, . . . the diseases of our occupations, those clearly man-made calamities, of dust and fumes that cut and poison, of heat and darkness, . . . disorders of nutrition, the too much, and too little, and the not right kind of eating, . . . the less numerous difficulties of inheritance, . . . developmental disturbances of function and structure, tolerable perhaps among kings but relentless handicaps among the lowly, . . . and our worst enemies, our habits of indulgence that make us but brutish and numb to fine existence."

"Have we not let the most precious wait until the last?" asks Dr. Emerson. "Is it not our self-control, discrimination, judgment, imagination, emotion that makes it worth while to have a body at all, whether well or ill, straight or crooked, long-lived or short?"

And his answer is, "Certainly we have reversed the project of philosophers and accomplished a great measure of industry and science, and some civic order, before we have attained the general distribution of intelligence or led our people to use and understand the power of their emotions."

"For further progress we must await a solution not only from one profession giving its message in the form of health, a contrast with disease, but as the goal of all the community. No longer will protection be given *to* the people or be provided *for* them; but they themselves shall see the vision and attain it by their own volition. . . .

"The mind of man is worth the saving, and it will not be done by vaccines and vitamines alone.

"A few indispensables appear for the campaign of the community for mental health:

1. A wish to better human relations;
2. A training in thought and emotion, and their expression, in place of memory and mimicry;
3. A pride in the early detection of error of mind and its performance equal at least to our present satisfaction in catching tuberculosis or cancer in the curable stage;
4. Liberation of our schools for children, our colleges for grown-ups, our professions of medicine and nursing from fear to face a bruised mind, a broken spirit with the same courage and resourcefulness they now spend lavishly yet not excessively, on crooked legs and lame lungs."

Dr. Emerson concludes, in reference to the fiftieth anniversary of Pasteur's great work, "We dare not let another celebration mark a half century of social progress without a record of spiritual salvaging and reconstruction in some way comparable to our material triumphs since 1873."

BETTER TIMES

The midget among newspapers was born in New York December 24, 1919. Like the ugly duckling, it eventually found its proper sphere of influence and became a monthly. *Better Times* tells the story of its development in its May issue. It is a publication representing the 2,000 charitable and social organizations of New York City, but it has great interest for health and welfare workers everywhere.

This month is reported an experiment in health education by the East Harlem Health Center. This center, organized in September, 1921, has adopted the method of the brush salesman, political candidate, and tract bearer. It has undertaken a house to house canvass instead of talks, lectures, and exhibits, as a means of reaching each of the 2,000 homes and every person in its district. A number of health organizations in the same territory are giving the center help and lending canvassers.

"The first fifteen minutes of the canvasser's visit to a home are devoted to a talk with the head of the family on the prevention of sickness with reference to the agencies of the community working toward this end. Then she enquires about members of the family, noting on her record slip any unregistered prenatal case, infant not under care, or the need of social service. There is also a space for a report of bad sanitary or housing conditions. . . .

"An interesting feature of the canvass will be the record it will give of the number of persons in need of attention who will come to the Center after the first call of the field worker, for no follow-up work will be done for six months after the initial visit."

Through the cooperating membership of other health organizations within the same district as that in which the Center is located, duplication of work has been eliminated, in fact, "these agencies have been able to increase their services by 41 per cent. since they came into the Center without any increase in personnel."

AMERICAN CHILD

"We are opposed to child labor—we believe in children's work," says the *American Child* for May in its two-page rotogravure section. The labor they oppose—exploitation of child life in fields, factories, and homes by piece work—"shuts out all opportunity for normal and healthful recreation" and "does not educate or train for adult life." The type of work in which they believe is represented by the "Four-H-Clubs"—clubs of children for the development of the head, hand, heart, and health. The pictures of the section show why the National Labor Committee, which publishes the *American Child*, is not liked by some manufacturers and middle men handling beet sugar, cotton, artificial flowers and beaded dresses—industries that enslave children.

"The golf links lie so near the mill
That almost every day
The laboring children can look out
And see the men at play."

(Sarah N. Cleghorn.)

THE FOURTH OF JULY

As It Used to Be

Into his bag the doctor drops
A roll of gauze, some cotton waste,
Adhesive tape, ammonia drops,
Some fluid with a biting taste,
A knife or two, a hemostat,
Some drugs that will relieve a pain.
Today his practice will be fat;
July the fourth is here again.

As It Is Now

Into his bag the doctor drops,
Six new golf balls, a driver too.
Into his car he quickly hops,
And eighteen holes he'll try to do;
He needs no knife or hemostat,
His day is full of joy, not pain;
A safe and sane time's come to bat,
July the fourth is here again.

WHAT THE DOCTOR ORDERED

"What did the doctor say?"
"Let nature take its course."
"And did he charge for that advice?"
"Certainly. A good doctor assists, he doesn't interfere with nature."

THE AVIATING HORSES

From an article in a medical journal

"We were in a neighborhood where times were too hot for proper camp sanitation. Dead horses and disagreeable odors arose from every side."

BY ANALOGY

"It appears to me," quoth the sallow and unventilated young woman, "that if the Lord had intended me to sleep out-of-doors, he would have covered me with fur."

"By the same token" said the bright-eyed young damsel with rosy cheeks, "one might infer that if the Lord had intended you to get in a bath tub, he would have covered you with scales."

THE AVERAGE MAN BELIEVES

That all doctors write illegibly.
That prescriptions are written in Latin so patients won't be able to read them.
That there is a "cure" for everything.
That ice cream and pickles won't mix.
That drinking water at meals is unhealthful—or maybe it's before meals.
That the number seven is lucky—or unlucky.
That good surgeons have to have long fingers.
That all "glands" have something to do with sex.

IT ISN'T THE COST; IT'S THE UPKEEP

A New York jury recently awarded a woman $40,000 for the loss of a leg. The latest court decisions, as collected by a legal journal, show the value of a woman completely assembled as:

Legs, @ $40,000	$ 80,000
Arms, @ $42,500	85,000
Hair	20,000
Nose	15,000
Eyes, @ $10,000	20,000
Broken heart	250,000
	$470,000

This teaches us that a first class wife should be given at least as much attention as a 1914 flivver.

CURRENT LITERATURE

A recent book bears the title "The Whole Truth About Alcohol." Half the truth is unprintable!

A magazine has a feature headed "Why Our Insane Asylums Are Overcrowded," but a careful reading reveals no mention of persons who tried to follow their friends' advice on how to keep cool in summer.

A new detective story is called "The Emperor's Old Clothes"—as if every one did not know that those are the ones the emperor is wearing now.

A volume recently seen in the library was labeled "The Humor of Scotland"—and it had jokes in it.

H. G. Wells has just issued "Men Like Gods"—and the proof is that there are so many gods they like.

He also wrote "The Secret Places of the Heart" and any physician can tell you that they are just beneath the valves.

The current opinion is that "Flaming Youth" would better have been burned.

English novelists are obsessed with what the Freudians would call a boarding house complex. We have "The Room" by G. B. Stern, "Jacob's Room" by Virginia Woolf, and "A Room with a View" by E. M. Foerster. We were bored by all of them and have plenty of room for others.

James Harvey Robinson put over "The Mind in the Making" as a nonfiction best seller—but with a conscious, subconscious, and unconscious, they are not making it, they are disintegrating it.

Some delight to play at golf,
At tennis others play with vim.
But when the month is hot July,
It's best to take a pleasant swim.

THOUGHTS BY THE WAY

Some men are born foolish; some men acquire foolishness; a few travel a thousand miles to see a heavyweight boxing contest or a five hundred mile motor race.

Unless the early fly should die,
He'll bring his gang back by and by.

Man wants but little here below, but women for a lot will long.

In the last fifty years, the science of medicine has advanced more than in the previous fifty centuries. But the average man or woman is still willing to tell you an infallible remedy for a cough or the rheumatism.

Half the pleasure of dying is going to be spoiled for most of us if any ignorant spiritualistic medium is going to be able to call us up at fifty cents a call.

DIAGNOSED

He.—There is an awful rumbling in my stomach—like a cart going over a cobblestone street.

She.—It's probably that truck you ate for dinner.

TIME AND TIDE WAIT FOR NO WOMAN

INDIGNANT YOUNG THING.—I've brought back this bathing suit. I never saw such a thing in my life. I was in the water only an hour and it had already shrunk five inches.

MODEST CLERK (*carefully considering the garment*).—Lady, it's a good thing you came out when you did.

THE USUAL QUESTION

Doctor.—Your boy is all right. All he needs is a little soap and water.

Anxious Mother.—Before or after meals, doctor?

SOME DESIRABLE NEW INVENTIONS

A fountain pen that will write original jokes.
A nonrefillable bottle and a nonemptying one.
A hair restorer that will restore.
A driver that will guarantee two hundred and fifty yards straight down the fairway.

THE OLD ONES ARE THE BEST

While traveling in the Pacific Coast states recently a well known author was taken violently ill with an attack of indigestion. Hearing that there was a Chinese doctor in the town who was highly regarded by the citizens of the locality, the author sent for him. The doctor came, felt of the sick man's pulse, inquired briefly as to his sufferings, and then entered upon the following inquiry:

"You smoke cigar?"

"Yes."

"Sligalet, too?"

"Yes."

"Pipe, maybe, eh?"

"Sometimes."

"You takee li'l dlink sometimes—maybe col' pop, col' soda, col' milk shakee, col' linger beer, licy-col' lemonade, col' slider, maybe some hot tlea, hot cofee, hot chocolatee, lots of sugar and cleam?"

"Sure thing!"

"You eatee fast?"

"I got to, doctor—always in a hurry—lots to do, you know."

"You eatee hot biscuit?"

"You bet."

"You eatee fly ham, fly bacon, fly eggs, hot clakes, lots molass?"

"I'll say I do."

"You eatee gleasy stuff—some fly, some roast, some boil, some stew, some blake—you mix 'em all uppee same time, eh? Maybe some jam and gleasy glavee same time, eh?"

"Yes, everything goes with me."

"You eatee pie?"

"Pie? Pie is my middle name, doctor."

"You eatee some pickle, some cheese, some nut, some nice lich clake, some ice cleam—you mixee all uppee inside same time, eh?"

"Yes, sir—that was the way I was taught to eat at boarding school."

You dlink lice water same time?"

"Of course."

"You chewee up wood toothpickee fine, eh, at finish?"

"Sometimes I do—sometimes I have to chew a match."

"Goodbly. No curee damn fool."

—*Pickup.*

(*Continued on adv. page 8*)

ROBERT G. CLAYTON AND DUDLEY LAMAR WERE TWO HUSKY SAMPLES OF YOUTH ENDOWED WITH ALL BLESSINGS THAT NATURE CAN GIVE. SOUND IN EACH MUSCLE AND TOOTH
ROBERT G. CLAYTON WAS GLAD TO HAVE TEETH AND EACH MORNING HE BRUSHED THEM WITH CARE BUT DUDLEY LAMAR WOULDN'T BOTHER WITH THIS HE SAID HE HAD NO TIME TO SPARE.
THE RESULT OF THEIR ACTIONS AS OLDER THEY GREW. WAS, ROBERTS TEETH STAYED WHITE AND STRONG AND FOODS OF ALL KINDS HE WAS ABLE TO EAT HE WAS DUE TO KEEP WELL AND LIVE LONG
THE TEETH OF POOR DUDLEY FELL AWAY FROM DECAY. THEY ACHED AND SOME TROUBLE ENSUED THE PRICE OF HIS FOLLY HE NOW HAD TO PAY HE WAS DOOMED TO A LIFE OF SOFT FOOD
THERE'S A MORAL TO THIS, IF YOU'RE WISHING FOR WEALTH, TAKE CARE OF YOUR TEETH, THERE ARE RICHES IN HEALTH

Our Obligation ~

The experience of physicians for over half a century has confirmed them in their faith in Parke, Davis & Company products. Such confidence carries with it a solemn obligation. As we see it, it means that our staff of research workers in medical and chemical fields must continue to devote their time and thought and energy to the improvement of old remedies and to the elaboration of new ones. It means, essentially, that the physician's expectation of superiority—of highest quality—in Parke, Davis & Company medicines shall be fully realized.

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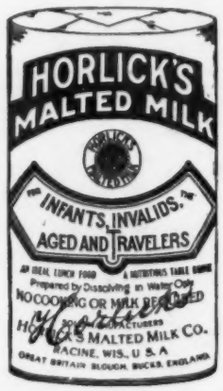
DETROIT

A HEALTH FACTOR IN MANY HOMES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Sample and literature prepaid on request.

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OH! VERY WELL!

(Continued from page 272)

CURRENT COMMENT

The Changing Fashions

Winchester (Ill.) Times

Some health authority says the girls of today are stronger and sturdier than the grandmothers were, which causes an exchange to remark that necessity compels them to be, for they couldn't lug around the modern ear-rings unless they were stronger and had better leather in their ears.

Write Your Own Caption!

Billings (Mont.) Gazette

Chauncey M. Depew, on his eighty-ninth birthday, says "leave the monkey glands alone." One reason he is still on the band wagon is because he never monkeyed with it.

In the Right Direction

Brooklyn Eagle

"Car Kills Two; Gets Six Months," says headline. That's the idea; lock up the cars and give the drivers six months as pedestrians.

IN ARKANSAS

At a camp meeting held in a southern state many of the people attended the services barefooted. One evening, in response to an altar call, a tall farmer knelt at the "mourner's bench." A near-sighted preacher kneeling behind him noticed his bare feet and placing his hands on the heels said solemnly: "God bless these little boys!"—*Judge.*

A WAY OUT

"I wish," said the little invalid who was being washed in bed, "that I need never, never have to be washed again."

"I'm afraid," said mamma gently, "that as long as you have me to take care of you, you'll have to reconcile yourself to be washed thoroughly every day."

The invalid pondered for a moment.

"Then," said she "I shall marry very early."—*Los Angeles Times.*

FROM THE DOCTOR'S PRACTICE

As told by a colleague in Melur, Madura district, India

A doctor doing a widely scattered practice in the back blocks in Australia was sent for by an anxious mother who feared that her child was very ill. The doctor on arrival began to apologize for the noisy rattling of his motor car, and the anxious mother said, in quick reply, "It's the sweetest sound I ever heard."

VAN ALLEN.

A KNOWLEDGE OF ANATOMY

The little daughter of a Chicago public school principal is now a pupil at the experimental school at the university, where she learns some things not taught in the regular city schools. One day her father found her crying.

"What's the matter, Noreen?" he asked.

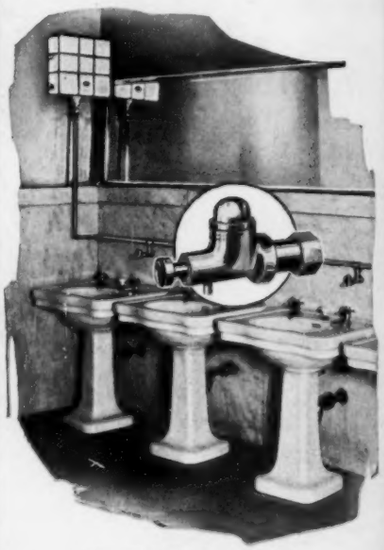
"I fell and bumped my patella," she replied. (Remember, this was in Chicago, and not in Boston.) Father was sympathetic. "Poor little girl," he said, and proceeded, with the best intentions, to examine her elbow. Noreen broke away.

"Huh!" she snorted. "I said my patella! That isn't my elbow. My elbow is my great sesamoid." Father went for a dictionary.—*The Christian Register.*

WEST SOAPARATUS

A Gravity Liquid Soap Dispensing System

With other improvements, time has brought about a change from the old way of washing—a West development for dispensing liquid soap in a clean, satisfying manner.



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Representatives Wanted see page 10